A BUSINESS STUDY OF SELECTED OKLAHOMA COOPERATIVE GRAIN ELEVATORS, 1953-1955

by

HENRY PONDER
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Bachelor of Science
Langston University
Langston, Oklahoma
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Thesis Advisor

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PREFACE

I wish to express my appreciation to the Department of Agricultural Economics for the opportunity of making this study. The facilities and assistance provided were essential to the completion of this thesis.

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CHAPTER I

INTRODUCTION

Cooperation in one form or another is as old as civilization. Throughout time, people have found it to their advantage to work together inasmuch as working together resulted in more benefits to each than could be attained by working alone. Because of this realization, there arose the guilds of Greece and Northern Europe, the Friendly Societies of England, and eventually the Rochdale Pioneers. These organizations were forerunners of our cooperative movement. The principles and objectives of these early, successful cooperatives were not unlike the principles and objectives of our present day cooperatives.

The first large scale cooperative movement in the United States was begun in 1867 by Oliver Hudson Kelley who, in that year, organized the Grange. The Grange was the first organization in this country to definitely stimulate collective purchasing of farm supplies and selling of farm products.[1]

Growth of Cooperatives

The cooperative movement had its largest growth during the last half of the nineteenth century. Five important developments appear to have directly influenced the associated efforts of farmers during this

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[1]Henry H. Bakken and Marvin A. Schaars, The Economics of Cooperative Marketing, (New York and London, 1937), p. 49.

period. These were: (1) extensive expansion of agriculture west of the Alleghenies; (2) production of surplus agricultural commodities; (3) low prices of farm products; (4) resentment against high freight rates and wide marketing margins; and (5) organizing activities of general farm organizations.[2]

Cooperative grain marketing is largely a result of the grain growers' desire to obtain representation on local markets. The development of cooperative grain marketing in the United States may be divided logically into the following periods: 1857-1875, a time of isolated local efforts; 1876-1885, a period of decline in number of local cooperative elevators; 1886-1914, years marked by a revival of interest in this form of cooperation and an increase in the number of cooperative grain elevators; 1915-1920, the period of most active growth of farmers' cooperative elevators, under the additional stimulus of a rapidly expanding wheat acreage; 1921-1929, the time of most rapid growth in cooperative terminal sales agencies, development of wheat pools, and efforts toward establishing a national sales agency. Since 1929, a national sales agency has been in operation, and there has been a revival of interest in the stability of local cooperative elevators.[3]

In 1857, a group of Wisconsin farmers built the first cooperative grain elevator at Madison, Wisconsin. The number of local cooperative elevator associations in the United States reached a peak of about 4,000

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[2] Ibid., pp. 47-48.

[3] Ward W. Fetrow, Cooperative Marketing of Agricultural Products, Farm Credit Administration, Cooperative Division, Bulletin No. 3 (Washington, 1936) p. 45.

in 1921. In 1935 there were 3,125 farmer-owned elevators in the United States, with a membership of about 580,000, and a business of about $315,000,000.00. Of these totals, Oklahoma had 84 farmers' elevators, 20,000 members, and a business of $11,000,000.00.[4]

Theory of Cooperative Marketing

There are three agencies engaged in marketing farm products. These are private, governmental, and cooperative agencies. A private agency is a proprietary, partnership or corporate business that has profits as its motive. Any division of government, such as the municipal, town, county, state or national government, engaged in marketing is a governmental agency. This is not a common form of marketing in the United States, but is widely used in foreign countries. The third agency is the cooperative. It has risen to a place of importance because of its method of organization, and its operating policies and principles. It has proven itself as an efficient type of business organization for acquiring commodities, providing services, and selling farm products.

A cooperative association is a non-profit business organization set up by members for members, as a group, to receive benefits that they would not be able to receive individually. Unlike an ordinary corporation which operates for profit, the purpose of the cooperative is service to members and patrons at cost. A true cooperative association does not acquire "profits" for itself because any savings above the cost of

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[4] R. H. Elsworth, Statistics of Farmers' Cooperative Business Organizations 1920-1935, Farm Credit Administration Cooperative Division, Bulletin No. 6 (Washington) p. 60.

operation are eventually returned to the membership. The Rochdale Pioneers, in 1844, founded their business on this principle. It was based on the simple operation of buying and selling where the gains went to the patron-owner of the business rather than to one who was strictly an investor.

There were many differences between the Rochdale organization and those that were formed at a later date. Most of the differences existed because the cooperatives that followed adopted more liberal credit policies. Essentially, however, the governing principles of present-day cooperatives are the same as the principles adopted by the Rochdale Pioneers. Those principles were:

1. Membership was open to anyone, irrespective of religions or political beliefs, race or nationality.
2. Only one vote was allowed each man.
3. Dividends on capital stock were not to be more than the interest rate on money at that particular time.
4. Earnings or savings were returned to members in proportion to the amount of business each furnished - that is, on a patronage basis.
5. A limit was placed on the number of shares of stock each member could own.
6. All business was placed on a cash basis; customers could not "charge" items they bought.
7. Goods were sold at regular retail prices rather than at cost.
8. Necessary reserves were accumulated.
9. Education in principles and practices of cooperation was promoted.[5]

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[5]Harry G. Anderson, Farmers Cooperative Marketing and Purchasing Associations, North Dakota Agricultural College, Extension Service, Circular No. 191 (Fargo, 1958) p. 13.

There are three basic principles that distinguish cooperatives from other types of businesses. They are: (1) democratic control, (2) limited returns to capital, and (3) sharing benefits, savings, and risks in direct proportion to the use made of the cooperative.

There are four main types of farmers' cooperative associations. These are: (1) cooperative sales or cooperative marketing associations, (2) cooperative purchasing associations, (3) cooperative service associations, and (4) workers' cooperative associations. This division is based on the purpose for which the cooperative was organized.

A cooperative sales association or marketing association refers to farmers cooperative associations that sell farm products which were produced individually on the farms of the members. Processing, packing, storing, financing, bargaining, and other marketing functions are carried on by such associations.

A cooperative purchasing association combines the purchasing power of buyers and aims to provide its members with high quality products at the lowest possible prices and with services that are essential and gratifying. The cooperative ordinarily sells to both members and nonmembers. Two subclasses are distinguished within this large group of associations:

1. Agricultural purchasing association whose members are farmers and handle or bargain primarily for goods asked for in farm production.

2. Consumers' cooperatives whose members are either farmers or city people and handle or bargain for commodities needed in the home.

Cooperative service associations provide services only to their members, who may be either farmers or city dwellers. These services fall under two classifications, consumption and production, and include financing, insurance, housing, and utility service.

Workers' cooperative associations are organizations that pool the labor of their members for joint action. They do not supply their members with services or commodities.[6]

Grain Cooperatives in Oklahoma

Oklahoma farmers were among the last of the major wheat producers to enter into the cooperative grain business. Because of this factor, other grain producing states were well ahead of Oklahoma in organizing farmers cooperative elevators. Expanding wheat acreage and favorable prices were an added stimulus to the development of farmers' cooperative elevators in the decade following World War I. About half of the active local elevator associations were started during the late 1920's.[7]

The first farmers' cooperative elevator in Oklahoma was organized at Alva in 1898. Its business operations were terminated in 1916 because of instability of the organization. The oldest active farmers' cooperative elevator in Oklahoma was organized in 1905 and is located at Elk City.[8] At present, there are more than one hundred well-organized farmers' cooperative elevators operating in Oklahoma. The main business of most of these elevators is marketing wheat. Of the 39 elevators included in this study, income from wheat was the largest single source of income.

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[6] Bakken and Schaars, p. 5.

[7] Harold Hedges, Operations of Cooperative Grain Elevators in Kansas and Oklahoma 1931-32 to 1936-37, Farm Credit Administration, Cooperative Research and Service Division, Bulletin No. 30, (Washington, 1939) p. 2.

[8] Ibid., p. 1.

There are two principle types of farmer cooperative elevator associations in Oklahoma, the single-unit association and the multiple-unit association. A single-unit cooperative association is one that operates one or more stations in one locality, and the administrative headquarters are located in that locality. A multiple-unit association is an association operating stations in more than one community but maintaining administrative headquarters in one community. The cooperatives used in this study are all single-unit type of farmers' cooperative elevators.

Most of the cooperative elevators of Oklahoma are affiliated with the Cooperative Grain Dealer's Association. The Cooperative Grain Dealer's Association was organized in 1916. Its purpose is to render service in any way that will make it possible for its member organizations to serve their local farmer members more profitably and efficiently. Included among the services are: general information; organization and capital structure needs, including articles of incorporation and by-laws; legal service; auditing and tax services; insurance services; collection of loss-in-transit claims; and purchase of coals, office supplies, and printing.

The Union Equity Cooperative Exchange, having one of the largest terminal elevators in the world, was organized in 1929 at Enid. With a capacity of over 50 million bushels, it is the outlet for the majority of the local elevators of Oklahoma. All of the cooperatives used in this study are affiliated with the Union Equity Cooperative Exchange.

Problem and Purpose of Study

Cooperative associations in Oklahoma are located at scattered points throughout the state. Although they may be handling the same commodities, providing similar services, and experiencing common problems, in most cases they do not have access to the financial records of other cooperative associations. Because of this, there is no way for the managers and others concerned with the successful operation of a local cooperative association to compare the efficiency of their own individual operation with the management and operation of similar cooperative associations. If local cooperative managers have some knowledge of the operations of similar cooperative associations, they may be able to improve the efficiency of their own individual firms. Information in a form which managers and members of cooperative associations can readily understand and which will make possible a comparative analysis of their elevators' operation is not available.

Cooperative associations use different business and operational policies. The policies used are not only different from those used by other types of businesses, but also differ among cooperative associations. Variations in the business policies, practices, and services of individual cooperative associations have a direct influence upon their income and expenses. By comparing the operation of similar cooperative associations, it is possible to delineate the good and bad points of each. If such findings are made available to the individual managers, they may improve the overall operation of their cooperatives. Any improvements in operation are likely to be reflected to farmers through relatively higher prices for their products, lower costs for farm

supplies, and improved services. To the extent that these improvements lead to greater service to the agricultural community, cooperative associations are likely to reap more savings for their patrons.

This study was undertaken to provide managers and members of cooperative associations with (1) information in a form that could be easily understood, and (2) means of comparing their operations with those of similar cooperative associations.

Method and Scope of Study

Wheat is an important crop of the United States and it is the most important cash crop of Oklahoma. A tenth of the total wheat production in the United States comes from Oklahoma, the second largest wheat producing state in the country.[9] Most of Oklahoma's wheat crop is marketed through a large number of local elevators where farmers deliver their wheat to be either sold or stored. In addition to facilities for handling grain many of these elevators provide other services such as cleaning and grinding, to their members.

Wheat accounts for the major part of the business of grain elevators in the State. In this study, unless otherwise specified, the term grain is used interchangable with wheat. Likewise the term elevator has been used for cooperative elevator. All the elevators in this study are located in Oklahoma.

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[9] Akhilesh Dubey, Costs and Margins of Oklahoma Cooperative Elevators, (unpublished M.S. Thesis, Oklahoma State University, 1955), p. 5.

This study is confined to grain cooperatives, and only those cooperatives whose income from wheat was greater than income from any other single commodity or service were included. The data for this thesis were obtained from audit reports of 39 cooperative elevators for the years 1953 through 1955. The audit reports were received from the cooperative elevators or, with the consent of the elevator manager, from Harold F. Hedges, Public Accountant, Enid, Oklahoma. The major portion of the data from the audit reports were taken from balance sheets, operating and trading statements, and details of expense items.

Insofar as possible the balance sheets, operating statements, and details of expenses were edited for uniformity. Frequently, different terms were used to mean the same thing because there was not standardization of terminology. All of the expense and income items that were common to a majority of the audits were listed as major items on the consolidated accounting statements. The author used his discretion as to where to place those items of income and expense that were not common to the majority of the audit reports.

In the balance sheet and operating statement sections an effort was made to analyze the financial conditions and operations of the cooperatives under study. The data for analyzing the financial conditions and operations were obtained by averaging the annual balance sheets, operating statements, and detail of expenses of the associations for the three-year period from 1953 through 1955. A comparative-percentage analysis was used. The items of the balance sheet were compared to total assets, total liabilities, and total net worth. The items of the operating statement were compared to total sales.

In the section on ratio analysis, an attempt was made to compare the financial structure and business operations of similar elevators. The three-year average of the various items included in the ratios served as a base for computing the ratios. The averages were obtained from the three annual values of the items taken from the annual audits of the elevators. Although definite assumptions cannot be made, a ratio analysis of this type does serve as an indicator of the strength or weakness of the financial structure and business operations of the elevators.

Many factors affected the financial condition and operations of the elevators. The last section shows the relationship of various factors to margins, managers' salaries, capital turnover, number of departments, inventory turnover, and labor expense. The comparison was based on the three annual values of the items taken from the annual audits of the elevators.

Location of Elevators Studied

The greater part of the elevators included in this study were located in the north central and northwestern parts of the State. These are the main wheat growing areas of Oklahoma. The yields are rather stable in the north central section, but vary greatly in the northwestern area. Of the 39 elevators studied, 26 are located in these two areas. One third of the elevators included in this study were located in two counties, eight in Garfield county and five in Alfalfa county. Two elevators were located in each of the following counties: Tulsa, Noble, Grant, Logan, Kingfisher, and Washita. The remaining elevators were located in Ottawa, Washington, Pawnee, Woods, Beaver, Woodward, Ellis,

Dewey, Custer, Canadian, Caddo, Kiowa, Tillman, and Cotton counties (Figure 1).

Grain elevators face the problem of overlapping of market areas. The elevators in Garfield and Alfalfa counties are especially close together. To a lesser extent, the same is also true of the other parts of the state. The cooperative elevators compete not only with each other, but also with independent grain buyers and elevator operators. This keeps the cooperatives on guard and serves as a stimulus for them to improve both their efficiency of operation and the amount of services rendered.

All of the elevators were served by at least one railroad. The Chicago-Rock Island and Pacific, St. Louis-San Francisco, and Atchison-Topeka and Santa Fe railroads provide direct connections between Enid and most of the elevators included in this study. National and state highways provide other means of transportation to all points. Highways facilitate the movement of grain to local markets, while terminal markets receive the greater part of their grain by railroad.

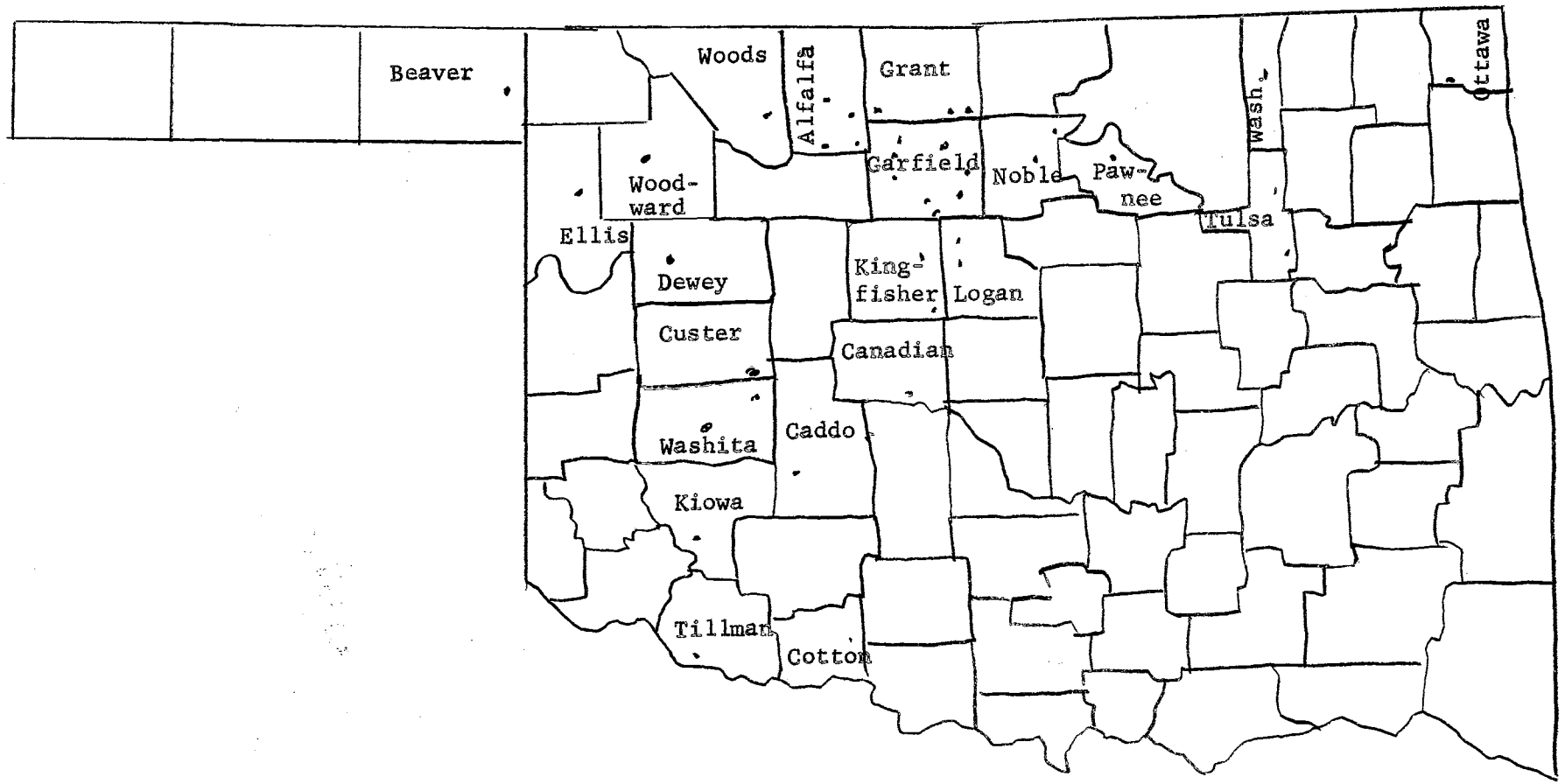

Figure 1. Location of Elevators Used in This Study

CHAPTER II

FACTORS AFFECTING THE SUCCESS OR FAILURE OF COOPERATIVES

A cooperative association may be organized according to cooperative principles, have good membership contracts, responsible personnel on its board of directors, well written articles of incorporation, a sound constitution and by-laws, an adequate physical plant, and still not succeed. These things are important, but should be combined with other factors to assure success. Cooperative associations are businesses, and like other businesses their success or failure depends upon proven, sound business practices and principles. Success does not come automatically to cooperative associations. Careful planning, hard work, good management, and sound business practices are basic to their success.

One of the main factors contributing to the success of a cooperative association is that it must be born of necessity. A cooperative association should be formed only after a survey has been made to determine if it is needed. If local businesses are already meeting the needs of the farmer, and a cooperative association cannot do the job better, then there is no need for forming a cooperative. If it can be determined that the local businesses are exploiting the farmer in a measurable amount, a cooperative association could be formed to help remedy the situation.

Some of the essential operating practices for success of a cooperative association are: (1) the cooperative must be efficiently managed; (2) the cooperative must have a sufficient volume of business for

economical operation; (3) the cooperative must have the loyal support of its membership; (4) the cooperative must be soundly financed, and (5) the cooperative must serve an economic need.[1]

In order to have efficient management, the manager must be well qualified, in sympathy with the cooperative movement, honest, and likeable. The manager should be well paid for his services, and the board of directors should cooperate with and assist him in every way possible. It should be realized that the manager is not the "whole show." In order to be successful, the cooperative association should also have a capable board of directors and a good plan of operation.

A cooperative must have sufficient volume of business for economical operations. One of the main reasons for a cooperative is to lower the cost of marketing, and if the volume of business is insufficient this cannot be accomplished to any great degree.

In order to succeed, a cooperative must have the loyal support of its members. A cooperative depends upon its members for business. In this respect it is different from a private business. Loyal members support their cooperative not only by their patronage, but by encouraging others to patronize the cooperative. Loyal members will attend meetings and at election time will do their utmost to elect good directors. Without loyal support from its members, the cooperative association is doomed to eventual failure.

A cooperative association should be soundly financed. The job of financing is up to the members. They should provide at least 50 percent

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[1] Bakken and Schaars, pp. 198-199.

of the initial capital. Each member should have an investment in the cooperative. If the cooperative association has inadequate capital, the services it can render are too limited. It takes different amounts of capital to start, but all cooperatives should be adequately financed for their actual needs. Investment in the association by members is an evidence of their faith in the cooperative and will help insure their patronage.

The cooperative must serve a need that cannot otherwise be met. Its members should be able to achieve more satisfactory results from collective efforts than each could receive through individual effort. The greater the need and the more satisfactory the services performed, the better the chance for the cooperative to succeed.

There are many other factors that contribute to the success of a cooperative association.[2] Byer, Wood, and Abshier list ten guideposts for profitable elevator management. They are:

1. Keep volume up - net income increases with volume--fixed expenses are about as much for low volume as for high volume.

2. Utilize labor efficiently--labor is largest item of expense--idle labor is still costing money - plan productive work to keep labor busy.

3. Watch gross margins closely. Selling price should cover cost plus expenses plus profit. Some items are more expensive to handle than others.

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[2]For other factors see: Bakken and Schaars, pp. 199-202; C. C. Garner, Making Coops Succeed, University System of Georgia, Georgia Agricultural Extension Service, Bulletin No. 498, (Athens, Revised, 1950), pp. 4-16; and George O. Gatlin, Factors in the Organization of Cooperative Associations, Oregon State Agricultural College, Extension Bulletin No. 406, (Corvallis, 1928), pp. 8-14.

4. Keep good records--know where you are--know what part of your business is making money--and what part is losing. Learning next year that your business lost money this year is too late.

5. Supply enough capital to provide the facilities necessary for most efficient operation.

6. Utilize capital fully. Excessive unused capital in buildings, equipment, or inventory is costly.

7. Keep your inventory turning. Keep your money invested in fast moving items. Too large stocks of slow moving items may be costly, through obselescence, damage or decay, taking up space without providing income, using interest without returns, or decreased value by price changes.

8. Watch inventories closely in times of fluctuating prices. When prices are going down, keep inventories down. When prices are going up, keep inventories up.

9. Remember that the employees are an important part of your organization. In most cases, they are your best salesmen. Treat them as human beings and fellowmen, but keep the reins of control in the hands of management.

10. Remember your purpose--to serve your customers. You are in business to serve them. Be fair, honest, and courteous. You may expect compensation in direct proportion to the service you give.[3]

A number of reasons have been given as the cause of failure of cooperatives. The United States Department of Agriculture made a study of 1,500 cooperative associations that failed or ceased operations. The causes of failure given by the associations were: inefficient management 72 percent; insufficient working capital 24 percent; voluntary dissolution 12 percent; and dishonest management, acts of providence, unfair competition, and miscellaneous causes 24 percent.[4]

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[3] E. G. Byer, G. B. Wood, and G. S. Abshier, A Financial and Business Analysis of Indiana Grain Elevators, Purdue University Agricultural Experiment Station, Bulletin No. 547, (Lafayette, 1950), p. 3.

[4] R. H. Elsworth, Agricultural Cooperative Associations, Marketing and Purchasing, 1925, United States Department of Agriculture, Technical Bulletin No. 40, (Washington, 1928), pp. 65-66.

Many associations gave several reasons for their cessation which explains why the percentages exceed a total of 100 percent.

The negative way of pointing out the road to success is to point out the causes of failure.[5] Gatlin prepared a list of factors which, in his opinion, contribute to the failure of cooperative associations. They were:

1. An organization should not admit as members men with conflicting business interests. It is difficult to maintain harmony and singleness of purpose when non-producers, buyers, and men of contrary or conflicting interests are grouped with bona-fide producers of identical interests.

2. An organization should not conceal from its members facts regarding its operations. Misleading statements, juggling funds, secret contracts, and similar practices undermine confidence. The organization belongs to the membership, not the officials and employees. There cannot be proper cooperation where there is suspicion.

3. An organization should not permit the engineering of elections and the appointment of officers by a self-perpetuating group. Democratic control must be more than a promise. Those elected to represent the members must represent them in fact, if the association is to be cooperative.

4. An organization should not rely upon force to maintain member cooperation. Threats, lawsuits, and coercion break down rather than build up the support of the growers. Coercion is the opposite of cooperation.

5. An organization should not sacrifice cooperative principles to obtain volume of business. Encouraging its members to purchase products for delivery, admitting buyers to membership, selling for non-members, and buying for its own account to increase volume tend to eliminate or minimize cooperative features.

6. An organization should not maintain an overhead expense out of proportion with the services required. Salaries should be commensurate with service rendered. Jobs

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[5]For causes of failure see: Bakken and Schaars, pp. 202-203; and Garner, pp. 16-18.

should not be provided as rewards to organizers or bribes to commercial interests.

7. An organization should not attempt arbitrary price-fixing based on monopoly control. A price that does not reflect supply and demand conditions brings about an economic readjustment that reacts upon the organization. No cooperative association can "fix prices" successfully over a period of years unless the price fixed is the "right price".[6]

Importance of Good Records

The primary purpose of record keeping is to obtain information and report it in an understandable manner. Summarized statements, to be used as a basis for management decisions for future operations, should be prepared from the detailed daily accounts. The most frequently used summary statements are the balance sheet and operating statement. These statements should be prepared at the end of each month and the end of each year. They indicate the progress of the cooperative association.

The successful operation of a cooperative association depends greatly upon good management, and good management may be enhanced by accurate accounting records. The manager who makes money without accurate records probably could make more money if he would keep accurate records of his business operations. Records provide the manager with definite and accurate information of the operations and financial condition of his business. This information may not always agree with his impressions, but financial records provide the most accurate information. Savings or losses at the end of the year are the net results of

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[6]George O. Gatlin, Elements of Cooperative Marketing, Oregon State Agricultural College, Extension Bulletin No. 429, (Corvallis, 1930), p. 3.

a series of financial transactions taking place during the year. Accurate records reveal sources of possible losses caused by inefficiencies, and show strong points that tend to create efficiency. A study of the records will reveal these sources while there is still time to do something about them.

Accurate records serve as a check on the honesty and efficiency of employees. Through the use of records, management can pinpoint inefficiencies and dishonest practices. Records protect the honest and efficient employees from unjust criticism. They also protect their jobs in the case of a "cut back" in personnel.

Savings at the end of each year are allocated to patrons according to the volume of business done. In order to do this correctly, the business firm must keep accurate records of each purchase or sale. Distribution of savings cannot be justly made unless accurate accounts are kept for all patrons.

Records are also important if a cooperative is to be exempt from income taxes. According to the Internal Revenue Code, a cooperative association which is to be exempt from income taxes must maintain permanent records covering all of its business with all of its patrons.

Unlike the small business enterprise, the cooperative association represents the interests of a large number of people. These interests are often involved and difficult to determine. The management is a hired agent of the cooperative and is answerable to the members. Since the management is handling funds belonging to others, these involved interests should not be left to memory. Accurate records are the best known way of avoiding injustice.

Where the method of retaining patronage refunds is used to build up capital, accurate accounts are very important. Each patron should know the amount credited to him. This is possible only if permanent, accurate records are kept.

The records should be simple but adequate and easily understood by the members. Accounts should be such that the membership can be kept well informed on problems confronting the cooperative. A report on the financial status of the cooperative should be made available at least once each year to the members. The directors should receive a report each month.

A good accounting system will provide information for comparing the financial data of one period with similar financial data of other periods. These comparisons are valuable in pointing out favorable and unfavorable trends of a cooperative association. Immediate action can be taken to remedy the cause of unsatisfactory trends and to take advantage of favorable trends. The comparisons also aid management in evaluating past operations and formulating policies for the future.

Separate records should be kept for each department of the business. All purchases, sales, inventories, and transfers among departments should be recorded. In a study made of Indiana grain elevators, Byer, Wood, and Abshier found that several managers felt that gross margin information by commodities and departments would be of little help to management. However, despite the opinion of these managers, the study revealed that the most profitable elevators were those which had this information so that the managers might know the gross profit or loss by departments.[7]

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[7]Byer, Wood, and Abshier, p. 17.

Balance Sheet

The balance sheet portrays the financial picture of the business at a particular date. Essentially, it is a statement listing all property owned by the business and all claims against the business. The balance sheet is sometimes referred to as "the financial statement," "statement of assets and liabilities," and "statement of resources and liabilities." In this study it is referred to as the balance sheet.

The balance sheet is divided into three sections: (1) assets, (2) liabilities, and (3) net worth. The name, itself, implies that there is a balance. If properly prepared, the assets are always equal to the liabilities plus the net worth.

Property owned by the business is called assets and represent those things which can be converted into money for paying claims of creditors and, in event of liquidation, paying claims of the owners of the business. All the assets listed on the balance sheet are for a particular time. Any succeeding financial transactions will change the amount of property owned by the business, thus changing its assets.

The assets are divided into current, permanent, and other assets. Current assets are those assets that can be converted into cash in a short period of time. Examples are cash on hand, inventories, and accounts receivable. Fixed assets are those assets used in business operations which remain in the business for a relatively long period of time. They are not immediately turned into cash in the normal operations of the business. Examples of fixed assets are buildings, machinery and equipment, trucks, and similar items. Other assets include all the other items not included in the above classifications; examples are

such items as investments, prepaid insurance, and stock.

The second part of the balance sheet is called the liabilities. Liabilities represent debts or obligations of the organization. The liabilities are divided into current liabilities, accruals and reserves, and mortgages payable. Those debts or obligations which will mature during the year's operation of the business are considered current liabilities. These include accounts payable, interest on stock payable, outstanding checks payable, and other items. Accrued liabilities are those expenses not yet due and payable but actually chargeable to the current period of operation. The funds that are set aside to pay accrued liabilities are referred to as reserves. Examples of accruals and reserves are accrued sales tax, accrued F.I.C.A. tax, and reserve for federal and state withholding tax. These expenses are paid only once or twice a year, but should have part of the expense charged to each month's operation if the balance sheet is to present a true picture of the financial condition of the organization at a particular time. Mortgages payable are the long-term obligations that are not due for a year or more.

The third part of the balance sheet is the net worth section. This section is sometimes called "members equity," but it is referred to in this thesis as net worth. It represents members' investments or claims by the owners on the assets of the business. It is equal to the excess of assets over liabilities. Net worth includes patronage refunds payable, members equity credits, capital stock, and surplus reserve fund. Unless assets exceed liabilities there is no net worth or owners' equity in the organization because it would take all the assets to pay creditor claims against the business.

Operating Statement

The amount of savings or losses may be determined from the balance sheet; however an operating statement is required to determine the nature of the savings or losses. The operating statement gives a picture of the business operations through a given period of time. If properly prepared, it will indicate efficiencies and inefficiencies of the business.

The items of the operating statement are divided into several groups. The principle ones are gross earnings, operating expenses, other additions, other deductions, and net earnings.

An operating statement should be prepared for each department of the business because it is usually only through detailed analysis that weaknesses and inefficiencies can be discovered. The sooner these are discovered the more quickly steps can be taken to overcome them. If the "leaks" are allowed to go unchecked, they may drain the savings of efficient operations of other departments.

Both the balance sheet and the operating statement are needed to determine how successfully a business is being operated. Information is needed from both to measure efficiency. This information can be obtained from the balance sheet and operating statements through a few simple calculations. These calculations should be made from statements which cover business operations for a period of years. For purposes of financial analysis, these measures are especially valuable to a given organization when they can be compared with those of similar businesses.

CHAPTER III

FINANCIAL ANALYSIS

Introduction

For analysis, the elevators were divided into 3 groups based on total sales. This division was to enable managers to compare the operation of their individual elevators with the operations of similar elevators. The groups were designated Group I, Group II, and Group III. Group I consisted of 10 elevators whose total sales ranged from $107,695.20 to $250,000.00. The average total sales of this group was $196,183.97. Group II included 19 elevators whose total sales ranged from $250,001.00 to $450,000.00. The average total sales of this group was $336,160.82. Group III, which consisted of 10 elevators, had the highest total sales of any of the groups. The range of this group was from $450,001.00 to $784,906.10; the average was $589,375.97.

The analysis of the elevators included in this study was based on information obtained from the annual balance sheets and operating statements of the elevators. Each elevator was assigned a code number which it retained throughout the report. For example, if elevator "A" was assigned code number nine (9), any information concerning elevator "A" for any of the years (1953, 1954, and 1955) would be found by checking under code number nine (9).

The analysis is presented in two major parts. The first part is an analysis of the annual balance sheets and the second part is an analysis of the annual operating statements.

PART I

BALANCE SHEET ANALYSIS

A balance sheet is a statement showing the financial position of a business at the end of the accounting period. It consists of two main sections, the assets and the liabilities. In this study the assets, which represent the property owned by or owed to the elevators, were classified as current assets, other assets, and permanent assets. The liabilities, which are claims against the elevators, were sub-divided into current liabilities, accruals and reserves, mortgages payable, member equities, and capital. Current liabilities, accruals and reserves, and mortgages payable represent claims by creditors against the elevator. Net worth, or the members' claims against the elevator, was listed as member equities and capital.

Assets

Current Assets

Current assets are those assets which can be converted into cash during a year's operation. The major current assets were cash, receivables, and inventory. All items not listed under the above headings, were listed under the general heading "other current assets".

Cash. Cash is composed of bank deposits and cash on hand. For the 3-year period, 1953-1955, cash averaged 32.3 percent of total current assets, and 8.5 percent of total assets. Cash accounted for 31.9 percent of the current assets in 1955 and 8.2 percent of total assets in 1954. As a percentage of current assets, cash was at a high of 32.6 percent in 1954 and as a percentage of total assets it was at a high of 8.8 in 1953.

The 3-year average percentage of cash to current assets was 32.47 percent and the percentage of cash to total assets was 7.94 percent for Group I (Table 1). The elevators of Group II had a 3-year average percentage of cash to current assets of 28.73 percent and a percentage of cash to total assets of 7.06 percent (Table 2). Group III had the highest average percentages of cash to current assets and cash to total assets with 37.40 percent and 11.35 percent, respectively (Table 3).

Inventory. Inventory is the amount of stock on hand at the date of the balance sheet. The inventory contains only those items purchased by the elevator for resale at a later date. It is an earning asset and is self-liquidating. For the period under consideration, the range of inventory to total assets, for Group I, was 3.23 percent for the elevator with the lowest percentage to 22.94 percent for the elevator with the highest percentage. The average was 5.60 percent. The range of inventory to current assets was 12.51 percent for the elevator with the lowest percentage to 48.68 percent for the elevator with the highest percentage. The average for this group was 22.91 percent (Table 2).

In Group II, the elevator with the lowest percentage of inventory to total assets stood at 1.56 percent. The highest percentage of inventory to total assets was 22.31 percent and the average was 7.06 percent. Inventory as a percentage of current assets ranged from 5.33 percent to 64.38 with an average of 28.69 percent (Table 2).

In Group III, the percentage of inventory to total assets ranged from a low of 1.49 percent to a high of 38.43; the average was 9.75 percent. Inventory as a percentage of current assets ranged from a low of 7.48 percent to a high of 56.84, with an average of 32.14 percent (Table 3).

TABLE 1

AVERAGE CURRENT ASSETS, GROUP I, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	Cash (Dollars)	Cash as a Percent of Current Assets	Cash as a Percent of Total Assets	Inventory (Dollars)	Inventory as a Percent of Current Assets	Inventory as a Percent of Total Assets	Total Current Assets (Dollars)	Total Current Assets as a Percent of Total Assets
1	29,355.53	51.47	18.13	12,994.63	22.79	8.02	57,031.30	35.21
2	11,224.41	36.23	9.06	7,901.78	25.50	6.38	30,982.53	25.00
3	14,685.91	27.05	5.14	13,396.87	24.67	4.69	54,296.14	19.00
4	1,699.87	9.23	4.35	8,805.48	48.68	22.94	18,087.79	47.12
5	4,041.91	21.12	6.51	8,700.04	45.47	14.02	19,135.35	30.84
6	4,511.58	37.99	7.74	3,997.92	33.67	6.85	11,874.31	20.36
7	13,924.18	31.24	6.31	6,679.91	14.97	3.03	44,611.37	20.21
8	20,389.79	48.81	12.77	9,201.72	22.03	5.76	41,770.00	26.17
9	7,743.94	11.70	3.02	8,281.02	12.51	3.23	66,186.99	25.78
10	13,204.79	47.37	8.57	5,233.98	18.78	3.40	27,873.44	18.10
Group Average	12,075.19	32.47	7.94	8,519.34	22.91	5.60	37,184.92	24.44

TABLE 2. AVERAGE CURRENT ASSETS, GROUP II, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	Cash (Dollars)	Cash as a Percent of Current Assets	Cash as a Percent of Total Assets	Inventory (Dollars)	Inventory as a Percent of Current Assets	Inventory as a Percent of Total Assets	Total Current Assets (Dollars)	Total Current Assets as a Percent of Total Assets
11	30,017.39	56.24	10.95	8,763.86	16.42	3.20	53,375.47	19.47
12	10,950.61	20.99	10.74	21,051.50	40.36	20.64	52,165.45	51.14
13	32,002.65	23.15	5.07	51,953.46	37.58	8.23	138,263.16	21.91
14	40,200.33	59.24	14.07	6,315.77	9.31	2.21	67,861.30	23.74
15	2,927.96	5.41	.80	18,553.41	34.27	5.07	54,145.07	14.80
16	5,347.53	11.80	4.09	29,174.98	64.38	22.31	45,313.39	34.65
17	7,592.59	18.32	3.82	17,677.82	42.65	8.90	41,444.67	20.87
18	23,710.31	34.64	8.67	14,173.43	20.71	5.19	68,453.00	25.08
19	13,283.20	11.35	3.90	49,643.12	42.44	14.56	116,982.40	34.31
20	17,578.56	21.93	5.01	12,500.77	15.59	3.56	80,170.11	22.85
21	27,097.75	40.85	11.93	3,536.80	5.33	1.56	66,335.78	29.20
22	21,694.74	32.57	8.50	21,346.41	32.05	8.36	66,603.16	26.08
23	30,598.83	47.87	10.00	10,847.56	16.97	3.55	63,919.28	20.90
24	11,211.76	16.01	4.01	20,151.84	28.77	7.21	70,042.73	25.07
25	19,957.80	30.20	8.44	24,727.25	37.41	10.45	66,090.88	27.94
26	14,162.09	22.59	6.91	16,811.14	26.82	8.21	62,685.79	30.60
27	17,724.54	42.95	9.13	4,886.70	11.84	2.52	41,271.09	21.26
28	24,993.91	44.00	9.82	16,364.03	28.81	6.43	56,808.82	22.31
29	15,425.62	24.22	5.51	18,010.38	28.27	6.44	63,698.39	22.77
Group Average	19,288.33	28.73	7.06	19,288.87	28.69	7.06	67,138.59	24.57

TABLE 3

AVERAGE CURRENT ASSETS, GROUP III, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	Cash (Dollars)	Cash as a Percent of Current Assets	Cash as a Percent of Total Assets	Inventory (Dollars)	Inventory as a Percent of Current Assets	Inventory as a Percent of Total Assets	Total Current Assets (Dollars)	Total Current Assets as a Percent of Total Assets
30	4,596.20	9.14	6.18	28,571.95	56.84	38.43	50,262.97	67.61
31	8,967.68	13.29	3.50	13,034.78	19.32	5.08	67,457.90	26.31
32	10,574.52	21.82	4.29	23,780.00	49.07	9.66	48,466.09	19.68
33	51,691.86	45.48	18.84	39,573.10	34.82	14.42	113,656.98	41.41
34	18,799.53	32.78	6.55	4,287.83	7.48	1.49	57,346.16	19.98
35	70,478.04	63.20	19.98	30,481.39	27.34	8.65	111,518.05	31.62
36	36,645.77	42.58	9.67	21,607.95	25.11	5.70	86,062.91	22.71
37	20,719.07	40.97	16.69	26,447.33	52.30	21.30	50,567.05	40.72
38	33,057.78	27.98	8.51	59,981.26	50.77	15.44	118,141.42	30.41
39	70,634.82	41.90	14.37	32,500.57	19.28	6.61	168,590.39	34.29
Group Average	32,616.53	37.40	11.35	28,026.62	32.14	9.75	87,207.03	30.34

During the 3-year period, 1953-55, average inventory as a percentage of current assets for all elevators ranged from 18.5 percent in 1953 to 30.8 in 1954 with an average of 29.1 percent. This compares with a Georgia study of 13 cooperatives for the years 1944-1947 which showed the average inventory to current assets to be 42 percent.[1] Inventory as a percentage of total assets ranged from 5.0 percent in 1953 to 7.7 in 1954, with an average of 7.6 percent. For comparison, a study made in Indiana of 119 cooperatives showed the value of inventory to be 30.4 percent of total assets,[2] and a Michigan study of 246 cooperatives the average inventory was 21.3 percent of total assets.[3] The inventory to asset percentages revealed by this study are much smaller than the findings of these reports.

Inventories should receive close observation and careful consideration by the management. In case of a price decline, large inventories might seriously impair the financial status of the elevator. Of the three group studies, Group III had the highest percentage of inventory to total assets and Group I had the lowest. Thus, the data indicated that percentage of inventory to total assets varied concurrently with gross sales. Although the size of the inventory is usually left to the discretion of the management, it should be governed by the demand and price outlook.

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[1]N. M. Penny, The Financial Status of 13 Farmers' Cooperatives in North Georgia, University System of Georgia Experiment Station, Mimo Series 4 (Experiment, 1949), p. 3.

[2]T. L. Canada and E. H. Matzen, An Economic Study of the History, Status and Operation of Agricultural Cooperatives in Indiana, Purdue University Agricultural Experiment Station Bulletin No. 518 (Lafayette, 1946), pp. 15, 17.

[3]H. E. Larzelere, Financial Management Analysis of Farmers' Cooperatives in Michigan, Michigan State College Agricultural Experiment Station Special Bulletin No. 315 (East Lansing, 1942), p. 40.

Total current assets increased with total assets. In 1955 total current assets of all elevators were 26.7 percent of total assets, while in 1953 they were 27.1 percent of total assets. Although current assets and total assets increased concurrently, this decrease in percentage is an indication that total assets increased at a more rapid rate. During the 3-year period, 1953-55, total current assets averaged 26.3 percent of total assets for all elevators. The average percentage of total current assets to total assets for the same period was 24.44 percent for Group I (Table 1), 24.57 percent for Group II (Table 2), and 30.34 percent for Group III (Table 3). The range of each group was: Group I, a low of 22.91 percent in 1955 to a high of 25.92 percent in 1954; Group II, a low of 23.07 percent in 1954 to a high of 25.85 percent in 1953; and Group III, a low of 28.85 percent in 1954 to a high of 32.0 percent in 1955.

The rate of total current assets to total assets increased as sales increased. This was the case because as sales increased there was a greater need for ready cash and other forms of securities that could be readily turned into cash.

Permanent Assets

Permanent assets, or fixed assets as they are sometimes called, are those assets that are used in the normal operations of the elevator over long periods of time and cannot be easily converted into cash. The major items listed in the audits as permanent assets were land, buildings, elevator buildings and equipment, furniture and fixtures, and delivery equipment. For this report, all permanent assets not listed under these headings were covered under the general heading "other permanent assets".

Investment in land was the smallest of the permanent assets and investment in elevator buildings and equipment was the largest for each of the three groups. The average percentage of land to permanent assets was 1.34 percent for all elevators. Group I was lowest with 1.08 percent and Group II was the highest with 1.15 percent. The average percentage of elevator buildings and equipment to permanent assets was 71.82 percent for all elevators. The lowest percentage, 68.39 percent, was found in Group II and the highest percentage, 79.28 percent, in Group I.

The average percentage of permanent assets to total assets for all elevators was 52.99 percent. The range was from 51.22 percent in 1953 to 54.33 percent in 1954. The average rate of permanent assets to total assets for Group I was 54.32 percent with a range of 53.0 percent in 1953 to 55.41 percent in 1955. The average of Group II was 56.27 percent with a low of 55.26 percent in 1953 and a high of 56.91 percent in 1955. Group III had an average of 46.34 percent and a range of 44.28 percent in 1953 to 50.09 percent in 1954.

Other Assets

Other assets are those items that cannot be properly classified as current or permanent assets. The principal items listed under other assets were prepaid insurance premiums, security deposits, investments, and stock. The items not covered by the above headings were listed under the general heading "miscellaneous assets".

Investments. The largest item under other assets was investments by the elevators in other organizations. The majority of these investments were in central or terminal organizations which serve as a source of purchase or as a sales outlet for commodities handled by member elevators. The principal organizations in which investments were made were

the Union Equity Cooperative Exchange and the Consumers Cooperative Association. In Group I, the average percentage of investments to other assets for the 3-year period was 85.86 percent and ranged from 56.73 percent to 94.31 percent (Table 4). The average percentage of investment to total assets for this group was 18.21 percent and the range was from 3.25 percent to 25.99 percent.

In Group II the rates of investments to other assets averaged 86.73 percent and ranged from 45.38 percent to 97.84 percent (Table 5). In the case of investments to total assets, this group averaged 16.62 percent and ranged from 3.91 percent to 26.00 percent.

In Group III the rate of investments to other assets averaged 89.75 percent and ranged from 44.52 to 99.91 percent (Table 6). For the same group, the rate of investments to total assets averaged 20.92 percent and ranged from 4.91 to 31.09 percent. The data indicated that, as gross sales increased, investments also increased. For the elevators in all groups, the average of investment to other assets was 87.61 percent and the average of investment to total assets was 18.16 percent.

Stock. Stock was the second largest single item listed under other assets. Miscellaneous assets were larger than stock, but they were an assemblage of a number of items. Most of the stock was with the Wichita Bank of Cooperatives. The average percentage of stock to other assets for all elevators during the 3-year period was 4.41 percent while the average of stock to total assets was only .91 percent. For Group I, the average percentage of stock to other assets was 6.54 percent and ranged from 35.35 percent to an elevator which did not hold any stock (Table 4). Group II had an average rate of stock to other assets of 4.98 percent. This group included 2 elevators with no stock and one elevator with 22.20 percent of

TABLE 4

AVERAGE OTHER ASSETS, GROUP I, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	Investment (Dollars)	Investment as a Percent of Other Assets	Investment as a Percent of Total Assets	Stock (Dollars)	Stock as a Percent of Other Assets	Stock as a Percent of Total Assets	Total Other Assets (Dollars)	Other Assets as a Percent of Total Assets
1	5,266.07	56.73	3.25	3,300.00	35.55	2.04	9,282.24	5.73
2	22,880.45	91.42	18.47	1,666.67	6.66	1.35	25,027.61	20.20
3	49,552.13	78.16	17.34	3,766.66	5.94	1.32	63,399.02	22.18
4	3,012.01	60.30	7.85	800.00	16.01	2.08	4,994.72	13.01
5	16,121.98	94.31	25.99	- -	- -	- -	17,094.21	27.55
6	7,019.00	78.38	12.03	1,400.00	15.63	2.40	8,955.17	15.35
7	56,483.97	92.63	25.59	3,033.34	4.97	1.37	60,977.62	27.62
8	35,189.76	88.06	22.05	1,533.34	3.84	.96	39,959.07	25.03
9	43,851.93	83.56	17.08	3,454.68	6.58	1.35	52,479.71	20.44
10	37,725.92	92.95	24.49	2,167.49	5.34	1.41	40,586.76	26.35
Group Average	27,710.32	85.86	18.21	2,112.22	6.54	1.39	32,275.61	21.21

TABLE 5. AVERAGE OTHER ASSETS, GROUP II, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	Investment (Dollars)	Investment as a Percent of Other Assets	Investment as a Percent of Total Assets	Stock (Dollars)	Stock as a Percent of Other Assets	Stock as a Percent of Total Assets	Total Other Assets (Dollars)	Other Assets as a Percent of Total Assets
11	46,869.48	97.84	17.10	533.33	1.11	.19	47,903.45	17.48
12	5,052.15	92.52	4.95	- -	- -	- -	5,460.57	5.35
13	82,428.14	89.41	13.06	7,100.00	7.70	1.13	92,187.96	14.61
14	70,600.18	90.02	24.70	- -	- -	- -	78,430.29	27.44
15	67,536.06	95.98	18.45	1,400.00	1.99	.38	70,365.41	19.23
16	5,111.14	45.38	3.91	2,500.00	22.20	1.91	11,262.98	8.61
17	16,993.87	79.14	8.56	4,000.00	18.63	2.02	21,474.35	10.82
18	59,388.04	86.93	21.76	3,935.14	5.76	1.44	68,314.48	25.03
19	60,043.25	92.06	17.61	4,466.67	6.85	1.31	65,221.85	19.13
20	56,819.02	93.81	16.19	2,233.34	3.69	.64	60,571.29	17.26
21	59,054.07	93.55	26.00	433.33	.69	.19	63,126.67	27.79
22	50,340.50	96.02	19.71	833.33	1.59	.33	52,427.60	20.53
23	58,582.46	57.07	19.15	2,728.09	2.66	.89	102,643.27	33.56
24	47,715.42	89.04	17.08	4,228.41	7.89	1.51	53,590.44	19.18
25	36,886.14	90.41	15.60	2,866.66	7.03	1.21	40,798.09	17.25
26	27,932.02	89.46	13.63	1,633.33	5.23	.80	31,223.51	15.24
27	35,659.15	85.88	18.37	1,266.67	3.05	.65	41,521.73	21.39
28	40,905.15	88.16	16.07	3,800.00	8.19	1.49	46,401.32	18.23
29	34,612.60	83.28	12.37	5,533.33	13.31	1.98	41,560.13	14.86
Group Average	45,396.26	86.73	16.62	2,604.83	4.98	.95	52,341.34	19.16

TABLE 6

AVERAGE OTHER ASSETS, GROUP III, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	Investment (Dollars)	Investment as a Percent of Other Assets	Investment as a Percent of Total Assets	Stock (Dollars)	Stock as a Percent of Other Assets	Stock as a Percent of Total Assets	Total Other Assets (Dollars)	Other Assets as a Percent of Total Assets
30	3,646.97	76.10	4.91	433.33	9.04	.58	4,792.16	6.45
31	79,725.84	92.56	31.09	2,137.48	2.48	.83	86,136.60	33.95
32	49,798.70	91.26	20.22	3,033.33	5.56	1.23	54,570.38	22.16
33	17,029.14	44.52	6.20	- -	- -	- -	38,249.40	13.94
34	70,219.50	89.20	24.46	7,562.26	9.61	2.63	78,721.02	27.42
35	108,830.60	99.91	30.85	100.00	.09	.03	108,930.60	30.88
36	85,277.77	91.74	22.51	233.33	.25	.06	92,958.05	24.53
37	9,203.95	59.14	7.41	1,400.00	9.00	1.13	15,562.95	12.53
38	69,430.56	96.17	17.87	1,366.67	1.89	.35	72,195.86	18.58
39	108,089.14	91.73	21.99	766.67	.65	.16	117,836.00	23.97
Group Average	60,125.22	89.75	20.92	1,703.31	2.54	.59	66,995.30	23.31

its "other assets" in stock (Table 5). The average percentage of stock to other assets for Group III was 2.54 percent (Table 6).

The average rate of other assets to total assets for Group I was 21.21 percent and ranged from 27.62 to 5.73 percent (Table 4). Group II averaged 19.16 percent and ranged from 5.35 to 33.56 percent (Table 5). In the case of Group III the average was 23.31 percent and the range was from 6.45 to 33.59 percent (Table 6). Considering the 39 elevators as a single group, the percentage of other assets to total assets was 20.73 percent.

During the 3-year period, 1953-55, the increase in total assets for all elevators was 17.25 percent. Current assets increased 15.60 percent, other assets increased 8.57 percent, and permanent assets increased 21.81 percent during the same period. In the case of all assets, the increases were continuous throughout the 3-year period.

The total assets of the elevators in Group I increased 37.29 percent over the 3-year period. Current assets increased 28.08 percent, other assets increased 32.41 percent, and permanent assets increased 43.63 percent. In 1954, current assets increased over 1953 but in 1955 they decreased below 1954; however, the 1955 average was not below the 1953 average. Total assets, permanent assets, and other assets showed a continuous increase throughout the 3-year period.

Group II showed an increase of 22.29 percent in total assets for the period studied. Current assets increased 18.13 percent, other assets increased 17.39 percent, and permanent assets increased 25.92 percent. Other assets increased in 1954 over 1953 but decreased in 1955 below 1954, however, they did not decrease below their 1953 level. Total assets, current assets, and permanent assets increased regularly each year.

The total assets of the elevators in Group III increased 1.22 percent during the 3-year period. Current assets increased 8.02 percent and permanent assets increased 3.13 percent but other assets decreased nearly 10 percent. Total assets decreased in 1954 below 1953, but increased in 1955 above the 1953 average. The same increase and decrease occurred with current assets. Other assets decreased in 1954 and increased in 1955, but not above the 1953 average. Permanent or fixed assets increased regularly each year during the 3-year period, 1953-55.

Liabilities

Current Liabilities

Current liabilities are considered as those obligations due within one year from the date of their inception. The current liabilities were listed as accounts payable--trade, and interest on stock payable. All items not included under these two headings were listed under the general heading "other current liabilities." Accruals and reserves are current liabilities, but since they were listed separately on the audits this report will treat them as separate items.

Current liabilities were nearly 3 percent of total liabilities and net worth (which are equal to total assets) for all 39 elevators included in the study. Current liabilities were 13.61 percent of total liabilities. Current liabilities of elevators in Group I during the years 1953-55 were 2.31 percent of total assets. They ranged from a low of 0.24 to a high of 24.31 percent (Table 7). The average percentage of current liabilities to total liabilities (not including net worth) was 8.86 percent, and the range was from a low of .78 percent to a high of 75 percent. Group II showed an average of 2.77 percent for current

TABLE 7

AVERAGE LIABILITIES, GROUP I, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	Current Liabilities (Dollars)	Current Liabilities as a Percent of Total Liabilities	Current Liabilities as a Percent of Total Assets	Accruals and Reserves (Dollars)	Accruals and Reserves as a Percent of Total Liabilities	Accruals and Reserves as a Percent of Total Assets	Mortgages (Dollars)	Mortgages as a Percent of Total Liabilities	Mortgages as a Percent of Total Assets	Total Liabilities (Dollars)	Total Liabilities as a Percent of Total Assets
1	6,546.78	24.12	4.04	1,102.75	4.06	.68	19,491.72	71.82	12.04	27,141.25	16.76
2	2,469.88	6.26	1.99	1,865.77	4.73	1.51	35,145.29	89.01	28.36	39,480.94	31.86
3	2,203.59	5.50	.77	3,292.91	8.21	1.15	34,600.33	86.29	12.11	40,096.83	14.03
4	9,331.68	50.22	24.31	927.54	4.99	2.42	8,322.53	44.79	21.68	18,581.75	48.41
5	4,029.45	75.03	6.50	1,340.96	24.97	2.16	- - -	- -	- -	5,370.41	8.66
6	862.75	3.39	1.48	440.02	1.73	.75	24,138.15	94.88	41.39	25,440.92	43.62
7	2,854.25	4.53	1.29	3,756.55	5.96	1.71	56,400.00	89.51	25.55	63,010.80	28.55
8	4,001.90	7.45	2.51	2,522.27	4.69	1.58	47.210.09	87.86	29.58	53,734.26	33.67
9	618.19	.78	.24	2,403.54	3.05	.94	75,933.67	96.17	29.58	78,955.40	30.76
10	2,174.42	4.92	1.41	1,026.18	2.32	.67	40,997.22	92.76	26.62	44,197.82	28.70
Group Average	3,509.29	8.86	2.31	1,867.85	4.72	1.23	34,223.90	86.42	22.49	39,601.04	26.03

liabilities as a percentage of total assets (Table 8). The high was 11.23 percent and the low was 0.22 percent. The average percentage of current liabilities to total liabilities was 12.65 percent ranging from 0.80 percent to 64.66 percent. The average percentage of current liabilities to total assets for Group III was 3.05 percent (Table 9). In this instance one elevator did not list any current liabilities. The average percentage of current liabilities to total liabilities was slightly above 20 percent. The range was from a high of 77 percent for one elevator to another elevator without any current liabilities (Table 9).

The relative size of current liabilities as compared with total liabilities and net worth is an indication of the financial soundness or weakness of a business. For financial soundness, the smaller this percentage the better. If this percentage increases above 30 percent, it may indicate a financial weakness. With an average of 2.79 percent for all elevators, the greater part of the elevators were financially sound. In several instances accounts payable were relatively large and thus current liabilities were large. This would indicate that these elevators were short of operating capital and were not paying cash for purchases and, therefore, not taking advantage of possible cash discounts.

Accruals and Reserves

Accrued liabilities represent that part of an expense which is not yet due and payable, but which is actually chargeable to the current period of operation. Reserves are those funds set aside to satisfy the accruals. Accruals and reserves are liabilities and should be shown on the balance sheet to present a true picture of the financial condition of the organization at a particular time. The listings under accruals

TABLE 8. AVERAGE LIABILITIES, GROUP II, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	Current Liabilities (Dollars)	Current Liabilities as a Percent of Total Liabilities	Current Liabilities as a Percent of Total Assets	Accruals and Reserves (Dollars)	Accruals and Reserves as a Percent of Total Liabilities	Accruals and Reserves as a Percent of Total Assets	Mortgages (Dollars)	Mortgages as a Percent of Total Liabilities	Mortgages as a Percent of Total Assets	Total Liabilities (Dollars)	Total Liabilities as a Percent of Total Assets
11	9,729.50	24.17	3.55	2,843.83	7.06	1.04	27,683.33	68.77	10.10	40,256.67	14.69
12	11,457.00	50.93	11.23	1,637.06	7.28	1.60	9,400.00	41.79	9.22	22,494.06	22.05
13	2,907.82	2.93	.46	13,826.92	13.92	2.19	82,566.28	83.15	13.08	99,301.02	15.73
14	9,476.26	11.35	3.32	20,761.52	24.87	7.26	53,233.33	63.78	18.62	83,471.11	29.20
15	1,201.44	3.63	.33	6,028.31	18.21	1.65	25,867.33	78.16	7.07	33,097.08	9.05
16	13,252.78	23.59	10.13	2,638.47	4.70	2.02	40,292.89	71.71	30.81	56,184.14	42.96
17	5,535.24	6.43	2.79	3,523.12	4.09	1.77	77,075.66	89.48	38.82	86,134.02	43.38
18	613.36	.80	.22	1.797.02	2.33	.66	74,596.23	96.87	27.33	77,006.61	28.21
19	21,706.74	24.16	6.37	4,737.55	5.27	1.39	63,412.89	70.57	18.60	89,857.18	26.36
20	11,814.24	24.04	3.37	1,516.11	3.08	.43	35,827.87	72.88	10.21	49,158.22	14.01
21	4,302.76	62.48	1.89	2,582.64	37.50	1.14	1.00	.02	.00	6,886.40	3.03
22	4,077.93	6.99	1.60	6,413.95	10.99	2.51	47,863.67	82.02	18.74	58,355.55	22.85
23	2,377.08	3.90	.78	2,292.13	3.76	.75	56,350.70	92.34	18.42	61,019.92	19.95
24	3,248.02	3.02	1.16	4,626.94	4.30	1.66	99,797.75	92.68	35.72	107,672.71	38.54
25	4,717.39	12.32	1.99	2,587.88	6.76	1.10	30,976.79	80.92	13.10	38,282.06	16.19
26	21,779.04	64.66	10.63	628.09	1.86	.31	11,276.67	33.48	5.50	33,683.80	16.44
27	4,822.10	27.28	2.48	4,653.51	26.33	2.40	8,200.67	46.39	4.22	17,676.28	9.10
28	3,783.56	4.59	1.49	2,415.97	2.93	.95	76,262.33	92.48	29.95	82,461.86	32.39
29	6,727.09	7.33	2.41	4,667.82	5.09	1.67	80,378.99	87.58	28.74	91,773.90	32.82
Group Average	7,554.18	12.65	2.77	4,746.26	7.95	1.74	47,424.44	79.40	17.36	59,724.88	21.86

TABLE 9

AVERAGE LIABILITIES, GROUP III, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	Current Liabilities (Dollars)	Current Liabilities as a Percent of Total Liabilities	Current Liabilities as a Percent of Total Assets	Accruals and Reserves (Dollars)	Accruals and Reserves as a Percent of Total Liabilities	Accruals and Reserves as a Percent of Total Assets	Mortgages (Dollars)	Mortgages as a Percent of Total Liabilities	Mortgages as a Percent of Total Assets	Total Liabilities (Dollars)	Total Liabilities as a Percent of Total Assets
30	11,333.95	77.58	15.24	927.21	6.35	1.25	2,347.53	16.07	3.16	14,608.69	19.65
31	13,778.50	38.49	5.37	5,120.12	14.30	2.00	16,896.04	47.21	6.59	35,794.66	13.96
32	10,234.91	13.05	4.16	3,243.68	4.13	1.32	64,967.88	82.82	26.39	78.446.47	31.87
33	2,864.47	20.66	1.04	2,459.22	17.73	.90	8,544.03	61.61	3.11	13,867.72	5.05
34	- - -	- -	- -	4,459.24	3.90	1.55	109,738.81	96.10	38.23	114,198.05	39.78
35	1,208.33	10.10	.34	10,755.58	89.89	3.05	1.00	.01	.00	11,964.91	3.39
36	8,008.24	35.67	2.12	5,111.43	22.76	1.35	9,334.33	41.57	2.46	22,454.00	5.93
37	11,589.94	28.22	9.33	1,166.72	2.84	.94	28,309.99	68.94	22.80	41,066.65	33.07
38	11,564.29	16.03	2.98	2,859.58	3.97	.74	57,700.67	80.00	14.85	72,124.54	18.57
39	16,985.19	67.04	3.45	8,348.29	32.95	1.70	1.00	.01	.00	25,334.48	5.15
Group Average	8,756.78	20.37	3.05	4,445.11	10.34	1.55	29,784.13	69.29	10.36	42.986.02	14.96

and reserves were accrued FICA tax (Federal Insurance Contributions Act), accrued sales tax, accrued interest payable, reserve for withholding tax, reserve for federal income tax, and reserve for state income tax. The items not covered under these headings were listed under the general heading "other accruals and reserves."

For all elevators concerned for the 3-year period, accruals and reserves were 1.60 percent of total assets and 7.82 percent of total liabilities. In the case of Group I elevators, accruals and reserves were 1.23 percent of total assets and 4.72 percent of total liabilities (Table 7). For those elevators average in Group II, accruals and reserves averaged 1.74 percent of total liabilities (Table 8). The average percentage of accruals and reserves to total assets was 1.55 for Group III. Accruals and reserves for this same group were slightly above 10 percent of the total liabilities (Table 9).

Mortgages

This section of the balance sheet contains the fixed liabilities. Since most of the mortgages were with the Wichita Bank for Cooperatives, the headings under this section were listed as "mortgage payable-Wichita Bank for Cooperatives." All mortgages other than these were listed under the general heading "other mortgages." Mortgages payable are similar to notes payable but are for longer terms--usually for more than one year and in many instances for several years.

Mortgages accounted for 16 percent of the total assets and 78 percent of the total liabilities of all elevators. In Group I, mortgages were about 22.50 percent of total assets and 86 percent of total liabilities (Table 7). In Group II, mortgages were 17 percent of total assets and nearly 80 percent of total liabilities (Table 8). Mortgages

accounted for slightly over 10 percent of the total assets and 69 percent of total liabilities of the Group III elevators (Table 9).

The average percentage of total liabilities to total assets, for all elevators during the 3-year period, 1953-55, was 20.46 percent. This indicated that the elevators were in a sound financial position since outsiders had a claim to only 20 percent of the assets. The relationship of total liabilities to total assets for the elevators in the 3 groups is shown in Tables 7, 8, and 9.

Net Worth

The second part of the liabilities section of the balance sheet is net worth, which represents the members' claims against the assets of the elevator. Net worth items were listed in the audits as members' equity and capital.

Member Equity

The items listed under members' equity were patronage refunds payable and member equity credits. Those items not covered by these headings were listed under the general heading "other member equities." Patronage refunds payable consist of those patronage refunds members have earned, but due to the policy of the elevators are withheld from the patrons until a later date.

The patrons' accounts are credited for all patronage refunds due but not yet received. Considering all elevators, members' equity was 26 percent of the total assets and 33 percent of the total net worth.

Capital

The items of capital were capital stock outstanding, capital stock credits, and surplus reserve fund. Items not listed under these headings

were listed under the general heading "other capital."

Capital for all elevators studied averaged 42.66 percent of total assets and 53.62 percent of total net worth. The rate of capital to net worth ranged from a high of 72 percent in 1955 to a low of 63 percent in 1954. Capital compared with total assets ranged from 49 to 59 percent. Group I had an average percentage of capital to net worth of 71.29 percent, and an average percentage of capital to total assets of 53.03 percent. Capital for Group II was 64.19 percent of net worth and 50.16 percent of total assets. In the case of the elevators in Group III, capital accounted for 68.69 percent of net worth and 58.42 percent of total assets.

The average percentage of net worth to total assets for all elevators was about 80 percent. With net worth constituting such a large percentage of the total assets, it appeared that the elevators as a whole were in a sound financial condition. This reveals that there is a growing tendency for the members of cooperative elevators to own all, or most of their business.

The data indicated that net worth increased as gross sales increased. For example, net worth accounted for 75 percent of the total assets of the elevators in Group I, 78 percent in Group II, and 85 percent in Group III. An increase in gross sales alone would not necessarily bring about an increase in the equities of members. The concurrent increase of net worth and total sales was due largely to the fact that the greater part of the business transacted by the elevators was with members and not with individuals outside the cooperatives. Such transactions increase patronage refunds payable and allow more capital to be set aside for reserves; hence the increase in net worth.

PART II

OPERATING STATEMENT ANALYSIS

The second important report of the elevators' business affairs is the operating statement. The operating statement is a record of the income and expenditures over a given period of time and shows the savings realized or the losses sustained. As such, the operating statement is a picture revealing the results of the elevator's activities during the designated time.

The most important operating statement items listed in the audits were: sales, cost of sales, gross earnings on commodities, other operating income, total gross earnings, expenses, operating earnings, other deductions, other additions, patronage refund, and net earnings or losses.

Sales

Sales are a fundamental measure of the size of an elevator. Sales represent an elevator's total receipts for commodities handled and services rendered during a given credit period. In an attempt to lower costs per unit of commodities handled and to improve their competitive position, cooperatives strive to enlarge their volume of sales and to increase their services.

Average sales of all elevators included in the study were highest in 1954 and lowest in 1953. Average sales decreased in 1955 below the 1954 average, but not below the average for 1953. Sales were 12.30 percent greater in 1954 than in 1953, but in 1955 they were only 4.20 percent greater than in 1953. The average sales for all 39 elevators for the 3-year period was $365,196.28.

Sales for Group I were highest in 1954 and lowest in 1955. For this group, sales were 8 percent greater in 1954 than in 1955, but in 1953 were only 3.78 percent greater than 1955. Average sales for individual elevators in this group ranged from $238,878.65 to $107,695.20 during the 3-year period, 1953-55. The average for the group was $196,183.97. Sales for Group II were highest in 1955 and lowest in 1953. In 1955, sales were 10.65 percent greater than in 1953, but in 1954 they were only 7.62 percent greater than 1953. The average sales for Group II for the 3-year period was $336,160.82 and the range was from $426,918.38 to $257,191.52. Sales for Group III were highest in 1954 and lowest in 1955. Average sales for this group were significantly greater than average sales for the other groups. During the 3-year period, 1953-55, average sales for this group were $589,375.97, ranging from $784,906.10 to $473,712.24.

Cost of Goods Sold and Gross Earnings on Commodities

Gross earnings on commodities is the difference between gross sales and cost of goods sold. An elevator buys produce from its patrons on the basis of the terminal or market price less the margin for expenses and earnings. The net price to the patrons, however, must be high enough to meet the competition of alternative marketing outlets or the producer will be unwilling to sell his produce to the elevator. Management is always confronted with the problem of maintaining a desirable margin. A large margin may cost the elevator some of its patronage, and a slightly lower margin may cause a net loss for the year's operations.

Considering all elevators, the cost of goods sold during the 3-year period was 91.0 percent of gross sales. The cost of goods sold

increased with gross sales. The average cost of sales was 92 percent of gross sales for Group I, 94 percent for Group II, and 90 percent for Group III.

The average of gross earnings on commodities for all elevators during the 3-year period was 7.18 percent of gross sales. Average gross earnings on commodities increased each year. The average gross earnings on commodities was 7.79 percent of gross sales for Group I, 5.13 for Group II, and 9.20 percent for Group III. Gross earnings on commodities increased with the number of departments. Elevators that handled only wheat had less gross earnings on commodities than those which handled a number of sidelines.

Other Operating Income

Other operating income represents returns to the elevator for operations other than the usual marketing and purchasing operations. These operations included: storage, handling, cleaning, grinding, and treating. Operations not covered by these headings were listed under the general heading "miscellaneous operation income."

Other operating income for all elevators during the 3-year period, 1953-55, averaged 11 percent of gross sales. In 1954, when gross sales were at their highest peak, other operating income was 12 percent of gross sales. In 1953 when gross sales were at their lowest level, other operating income was only 9.71 percent of gross sales. The average of other operating income to gross sales, by groups, was: Group I, 10.55 percent; Group II, 14.68 percent; and Group III, 7.18 percent.

Total Gross Earnings

Total gross earnings are found by adding gross earnings on commodities and gross earnings from other operations. This amount represents

the total earnings received by an elevator for which actual operating expenses were involved.

The average total gross earnings for all elevators during the 3 year period was 18.19 percent of gross sales. Total gross earnings varied directly with gross sales. In 1954 when gross sales were highest, total gross earnings were 18.13 percent of gross sales. In 1953 when gross sales were lowest, total gross earnings were 15.91 percent of gross sales.

Expenses

Expenses include those costs incurred by an elevator during its normal annual operations. Expenses were listed as salaries, overhead, taxes and license, and depreciation. The relationship existing between operating expenses and sales measures to some degree the operating efficiency of the elevator.

Salaries. The average salaries for the 3-year period for all elevators were 4.63 percent of gross sales. Salaries were the greatest single item of expense. The average salary expense was 4.92 percent of gross sales for Group I, 5.12 percent for Group II, and 3.54 percent for Group III. (See Tables 10, 11, and 12.)

Overhead. Overhead expenses increased each year for all elevators. The average overhead expense was 2.40 percent of gross sales. Group I elevators had an average overhead expense of 3.06 percent of gross sales, Group II elevators averaged 2.73 and Group III elevators averaged 1.82 percent.

Taxes and Licenses. Although the average expense incurred for taxes and licenses was very small, it increased each year for all elevators. During the 3-year period, 1953-55, this expense averaged only two-thirds

TABLE 10

AVERAGE EXPENSES, GROUP I, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	Salaries (Dollars)	Salaries as a Percent of Sales	Overhead (Dollars)	Overhead as a Percent of Sales	Taxes and Licenses (Dollars)	Taxes and Licenses as a Percent of Sales	Depreciation (Dollars)	Depreciation as a Percent of Sales
1	9,759.15	4.10	8,836.39	3.71	1,010.71	.43	3,909.78	1.64
2	7,594.15	3.18	5,509.09	2.31	1,315.83	.55	2,259.44	.95
3	10,273.33	4.98	7,298.15	3.54	2,694.61	1.31	3,662.04	1.77
4	12,035.62	6.83	3,377.71	1.92	825.40	.47	1,342.50	.76
5	10,876.19	5.06	5,610.19	2.61	674.94	.31	2,090.68	.97
6	5,033.43	4.67	3,061.80	2.84	418.25	.39	2,233.53	2.07
7	10,304.10	4.38	7,406.50	3.15	2,262.03	.96	1,612.60	.69
8	6,686.63	4.33	5,235.83	3.39	606.58	.39	2,277.72	1.47
9	14,106.70	6.82	6,291.56	3.04	2,891.24	1.40	3,394.79	1.64
10	9,909.87	5.43	7,359.76	4.04	734.14	.40	8,600.00	4.72
Group Average	9,657.92	4.92	5,998.71	3.06	1,343.37	.69	3,138.31	1.60

TABLE 11. AVERAGE EXPENSES, GROUP II, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	Salaries (Dollars)	Salaries as a Percent of Sales	Overhead (Dollars)	Overhead as a Percent of Sales	Taxes and Licenses (Dollars)	Taxes and Licenses as a Percent of Sales	Depreciation (Dollars)	Depreciation as a Percent of Sales
11	10,583.08	3.68	6,512.56	2.26	1,407.80	.49	3,676.82	1.28
12	25,435.08	9.84	10,784.18	4.17	2,057.28	.80	4,666.51	1.81
13	27,195.38	6.66	14,093.09	3.45	5,585.97	1.37	13,776.01	3.38
14	8,542.68	2.45	6,837.94	1.96	1,449.10	.42	1,546.27	.44
15	16,867.28	4.49	8,509.47	2.26	4,155.49	1.11	6,231.24	1.66
16	21,658.98	5.23	6,884.27	1.66	2,173.72	.53	3,403.15	.82
17	14,199.73	4.34	5,323.37	1.62	1,773.19	.54	4,386.96	1.34
18	14,813.95	5.76	7,543.00	2.93	1,842.55	.72	5,129.18	1.99
19	21,892.55	5.74	8,137.30	2.14	2,481.82	.65	4,484.92	1.18
20	17,015.87	5.69	10,859.57	3.63	4,769.66	1.60	6,454.07	2.16
21	7,764.80	2.40	5,599.42	1.73	1,190.67	.37	4,521.57	1.40
22	11,658.91	3.27	10,244.23	2.87	1,880.30	.53	4,424.17	1.24
23	25,112.17	9.48	14,276.35	5.39	2,544.01	.96	8,764.68	3.30
24	16,470.25	4.37	11,489.92	3.05	2,937.82	.78	4,555.39	1.21
25	20,178.84	5.37	9,033.50	2.40	2,439.34	.65	3,209.25	.85
26	16,620.94	3.89	8,981.66	2.10	1,835.09	.44	5,265.23	1.23
27	10,187.11	3.69	8,389.67	3.04	1,641.10	.60	4,667.44	1.69
28	12,587.98	3.92	6,125.89	1.91	1,695.20	.53	4,285.76	1.33
29	28,278.17	9.20	14,936.67	4.86	4,063.35	1.33	6,365.91	2.07
Group Average	17,213.88	5.12	9,187.48	2.73	2,522.29	.75	5,253.45	1.56

TABLE 12

AVERAGE EXPENSES, GROUP III, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	Salaries (Dollars)	Salaries as a Percent of Sales	Overhead (Dollars)	Overhead as a Percent of Sales	Taxes and Licenses (Dollars)	Taxes and Licenses as a Percent of Sales	Depreciation (Dollars)	Depreciation as a Percent of Sales
30	18,272.29	2.37	6,942.67	.90	1,276.49	.17	2,148.57	.28
31	19,504.31	4.02	9,878.21	2.04	2,392.70	.49	5,174.34	1.07
32	30,012.50	3.82	13,792.03	1.76	5,400.08	.69	5,426.09	.69
33	27,289.70	5.60	20,637.38	4.23	4,561.83	.96	13,777.51	2.82
34	13,704.71	1.97	8,501.42	1.22	2,858.21	.41	3,464.15	.50
35	22,998.74	3.63	11,062.70	1.75	4,228.78	.67	8,336.57	1.32
36	17,778.47	3.49	10,438.82	2.05	4,221.26	.83	6,798.01	1.34
37	12,100.68	2.56	5,526.44	1.16	562.29	.12	3,431.66	.72
38	22,576.86	4.29	10,235.73	1.95	2,718.20	.52	5,910.01	1.12
39	24,110.72	4.57	10,530.90	2.00	4,480.42	.85	9,166.94	1.74
Group Average	20,834.91	3.54	10,754.63	1.82	3,270.02	.55	6,363.38	1.08

of one percent of gross sales. This expense was 0.69 percent of gross sales for Group I elevators, 0.75 percent for Group II, and 0.55 percent for Group III.

Depreciation. The average depreciation expense for all elevators, which was 1.38 percent of gross sales for the 3-year period, increased each year. Depreciation expense as a percentage of gross sales was 1.60 percent for elevators in Group I, 1.56 percent for Group II, and 1.08 percent for Group III elevators. The average total operating expense for all elevators increased each year. This came about largely because of continued increases in overhead, taxes and licenses, and depreciation expenses.

Operating Earnings

Operating earnings are the difference between total gross earnings and total operating expenses. They give a picture of the net earnings from operations after allowance has been made for all incomes and all expenses directly connected with the usual operation of the business. The average operating earnings of all elevators increased with gross sales. In 1954 when average gross sales were highest for all elevators, the average percentage of operating earnings to gross sales was 9.55 percent. In 1953 when average gross sales for all elevators were lowest, average operating earnings were 7.14 percent of gross sales. The 3-year average percentage of operating earnings to gross sales for all elevators was 9.31 percent. The average percentage of operating earnings to gross sales for Group I was 7.98 percent, ranging from 6.05 percent in 1953 to 9.17 percent in 1954. Group II had an average of 9.65 percent which ranged from 8.20 percent in 1953 to 11.45 percent in 1954. The average for Group III was 9.39 percent, ranging from 6.37 in 1953 to 14.29 percent in 1955.

Other Deductions

Other deductions from income include that group of expenses that are not derived from the actual operation of the elevator as a business unit. These deductions were listed as interest expense, donations, and directors fees. All items not covered under these headings were listed under the general heading "miscellaneous deductions." Interest expense was the most important item under other deductions, accounting for more than 50 percent of all expenses included in this category.

The average total of other deductions increased concurrently with gross sales for all elevators during the 3 year period, 1953-55. As a percentage of gross sales, total other deductions were 0.86 percent for Group I, 0.74 for Group II, and 0.32 percent for Group III.

Other Additions

Other additions to income include that portion of income arising from sources other than actual business operations of the elevator. The items listed under other additions were commission on sales tax, cash long, and interest received. All items not covered by these headings were listed under the general heading "miscellaneous additions." Although the greater part of other additions to income appeared under this heading, it included several items. Interest received was the largest single item of other additions to income.

The other additions to income increased each year, averaging 0.15 percent of gross sales for all elevators over the 3-year period, 1953-55. The relationship of other additions as a percentage of gross sales was: Group I, 0.15 percent; Group II, 0.13 percent; and Group III, 0.17 percent.

Patronage Refund

Patronage refunds from the Union Equity Cooperative Exchange and from the Consumers' Cooperative Association were the two major sources of refunds for the elevators. All other sources of patronage refunds were insignificant.

The Union Equity Cooperative Exchange was responsible for 96.28 percent of the total patronage refund received by all elevators during the 3-year period. The Consumers' Cooperative Association was responsible for 1.73 percent; all other organizations contributed only 1.99 percent of the total. The Union Equity Cooperative Exchange was responsible for 96.73 percent of the total patronage refund received by Elevators of Group I (Table 13), 97.41 percent for Group II (Table 14), and 94.43 percent for Group III (Table 15). In the case of a few elevators, payments from the Union Equity Cooperative Exchange accounted for all the patronage refunds received. During the 3-year period, patronage refunds averaged 4.13 percent of the gross sales of all elevators. In 1954 they were 4.32 percent of gross sales, but in 1955 they amounted to only 3.75 percent.

Patronage refunds accounted for nearly 58 percent of total net earnings for Group I (Table 13), 44 percent for Group II (Table 14), and 38 percent for Group III (Table 15). In some instances, without patronage refunds elevators would not have been able to show any net earnings. The tendency was for patronage refunds to increase as gross sales increased. Group I showed the least amount of patronage refunds and Group III the greatest amount dollarwise. The reason for this was that as elevators increased their volume they also increased their trade with the regional organizations. This increase in patronage to the regional organizations increased the local elevators' patronage refund account.

TABLE 13

AVERAGE PATRONAGE REFUND, GROUP I, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	Union Equity Cooperative Exchange (Dollars)	Union Equity as a Percent of Total Patronage	Consumer's Cooperative Association (Dollars)	Consumer's Cooperative Association as a Percent of Total Patronage	Total Patronage (Dollars)	Total Patronage as a Percent of Sales	Total Patronage as a Percent of Net Earnings
1	4,127.75	98.85	48.19	1.15	4,175.94	1.75	21.78
2	14,007.29	99.98	2.79	.02	14,010.08	5.86	58.65
3	10,411.91	99.54	48.54	.46	10,460.45	5.07	22.46
4	- -	- -	235.35	56.23	418.59	.24	19.06
5	14,721.27	100.00	- -	- -	14,721.27	6.84	103.05
6	6,438.57	97.67	153.32	2.33	6,591.89	6.12	121.54
7	16,945.94	99.50	84.50	.50	17,030.44	7.23	75.43
8	13,083.37	99.83	22.40	.17	13,105.77	8.48	74.76
9	9,367.70	98.38	107.02	1.12	9,522.44	4.60	45.28
10	11,173.50	81.96	64.04	.47	13,632.87	7.47	216.95
Group Average	10,027.72	96.73	76.62	.74	10,366.97	5.28	57.93

TABLE 14. AVERAGE PATRONAGE REFUND, GROUP II, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	Union Equity Cooperative Exchange (Dollars)	Union Equity as a Percent of Total Patronage	Consumer's Cooperative Association (Dollars)	Consumer's Cooperative Association as a Percent of Total Patronage	Total Patronage (Dollars)	Total Patronage as a Percent of Sales	Total Patronage as a Percent of Net Earnings
11	21,169.45	99.32	144.96	.68	21,314.41	7.41	50.03
12	- -	- -	128.21	97.08	132.06	.05	1.96
13	26,263.71	98.12	503.04	1.88	26,766.75	6.56	24.73
14	23,710.95	99.95	10.77	.05	23,721.72	6.81	49.59
15	23,043.89	99.55	104.07	.45	23,147.96	6.16	45.20
16	- -	- -	127.59	24.39	523.19	.13	7.93
17	10,042.69	95.95	423.96	4.05	10,466.65	3.20	32.95
18	10,700.01	95.42	482.21	4.30	11,213.93	4.36	61.77
19	12,132.42	99.54	55.64	.46	12,188.06	3.20	41.64
20	19,469.19	99.57	84.93	.43	19,554.12	6.54	32.59
21	16,748.91	99.29	118.98	.71	16,867.89	5.21	41.23
22	17,090.12	99.73	45.96	.27	17,136.08	4.80	50.84
23	19,225.44	88.77	22.88	.11	21,657.24	8.17	119.98
24	16,172.32	95.97	339.48	2.01	16,851.87	4.47	82.10
25	13,013.94	99.62	49.49	.38	13,063.43	3.47	42.05
26	10,605.74	97.04	294.33	2.69	10,928.87	2.56	108.85
27	14,541.07	100.00	- -	- -	14,541.07	5.27	44.86
28	16,438.60	99.56	72.63	.44	16,511.23	5.14	53.12
29	7,334.20	86.42	1,152.75	13.58	8,486.95	2.76	32.51
Group Average	14,615.93	97.41	219.04	1.46	15,003.86	4.46	44.11

TABLE 15

AVERAGE PATRONAGE REFUND, GROUP III, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	Union Equity Cooperative Exchange (Dollars	Union Equity as a Percent of Total Patronage	Consumer's Cooperative Association (Dollars)	Consumer's Cooperative Association as a Percent of Total Patronage	Total Patronage (Dollars)	Total Patronage as a Percent of Sales	Total Patronage as a Percent of Net Earnings
30	- -	- -	755.81	53.65	1,408.84	.18	6.51
31	19,930.55	95.75	883.70	4.25	20,814.25	4.29	36.70
32	23,692.66	96.81	780.51	3.19	24,473.17	3.12	77.02
33	9,232.54	64.03	664.08	4.61	14,418.47	2.96	32.99
34	26,708.00	100.00	- -	- -	26,708.00	3.84	74.71
35	38,056.60	99.85	55.62	.15	38,112.22	6.01	50.15
36	24,275.83	97.76	555.73	2.24	24,831.56	4.88	34.15
37	4,279.47	88.92	359.49	7.47	4,812.65	1.02	31.50
38	23,097.03	96.54	352.34	1.47	23,924.28	4.55	40.16
39	18,467.73	95.60	849.82	4.40	19,317.55	3.66	18.52
Group Average	18,774.04	94.43	525.71	2.64	19,882.10	3.37	38.42

Net Earnings

The total of operating earnings, other additions, and patronage refunds, minus other deductions is net earnings before income taxes. Total net earnings are obtained by deducting income taxes from this amount. Income tax payments were greatest in 1954 when they were equal to .72 percent of gross sales, and they were smallest in 1953 when they were .59 percent of gross sales for all elevators during the 3-year period. Income taxes for the same period were .68 percent of gross sales for Group I, .82 percent in the case of Group II, and .52 percent for Group III. As might be expected, income taxes increased with volume of sales. Group I had the lowest income taxes and Group III had the highest income taxes.

Total net earnings for all elevators were highest in 1954 when they were 10.98 percent of gross sales, and lowest in 1955 when they were 7.83 percent of gross sales. The average percentage of total net earnings to gross sales was 8.8 percent for Group I, 10.6 percent for Group II, and 9.9 percent for Group III.

Total net earnings tended to increase as gross sales increased. This trend was influenced most by patronage refunds, which were second only to operating income as a source of income to the elevators. Since patronage refunds increased with sales, and since total net earnings increased with patronage refunds, total net earnings also increased with sales. In 1955, two elevators showed a net loss instead of a net gain. Both of these elevators had operating expenses which were very high compared with their operating income. In both cases, had it not been for patronage refund the losses would have been much greater.

Detail of Expenses

In order to determine the source of an increase in operating expense, an analysis of the items constituting total operating expense is necessary. This analysis may be made from that section of the audit entitled "detail of expenses." Such an analysis will give a picture of how each item of expense is related to the total operating expenses.

Salaries. The study disclosed that salaries made up the largest part of total operating expenses, and that managers' salaries made up the larger part of salaries. Considering all elevators, salaries accounted for slightly over 50 percent of the total operating expenses; dollar-wise, managers' salaries amounted to nearly 14 percent of this total. The study showed that as gross sales increased total salaries and managers' salaries also increased, but managers' salaries as a percent of total operating expense decreased.

Overhead. The second section of the detail of expenses sheet is overhead expense. Since they vary with the volume of operations, overhead expenses may be considered as variable costs to the elevators. The variable costs were listed as a multitude of general items. The most important of these were insurance and bonds, utilities, repairs, supplies, truck expense, and telephone and telegraph expense. Considering all elevators, variable costs accounted for 27 percent of the total operating expenses. In Group I, variable costs were nearly 30 percent of total operating expense; in Group II they were approximately 27 percent; and in Group III they were 26 percent of the total operating expense. In all instances, insurance and bonds were the largest expense items.

The third and fourth parts of the detail of expenses sheet were respectively, taxes and licenses, and depreciation. These expenses remain relatively constant over long periods of time, and may be considered the fixed costs of the elevators.

Taxes and Licenses. Taxes and licenses increased each year for all elevators, averaging 7.40 percent of total operating expenses. Taxes included advalorem, employee, franchise, and sales taxes. State and federal Unemployment Insurance taxes were included in the employee taxes. Corporation taxes, licenses, and commissions made up franchise taxes. Licenses included filing fee, annual license fee, grain and feed license, and automobile license.

Depreciation. Depreciation is computed by dividing the cost of each asset by its estimated years of life, and apportioning that share to the annual expenses. Depreciation is considered as an annual operating expense because eventually the fixed facilities must be replaced. Since depreciation costs tend to remain constant, in years of price decreases, these costs will tend to make up a larger share of total costs, and in years of price increases they tend to constitute a smaller share of the total costs. Average depreciation increased each year for all elevators during the 3-year period, averaging 15 percent of the total operating expense. Elevator, machinery, and equipment depreciation accounted for the greater part of the total depreciation expense.

CHAPTER IV

COMPARATIVE RATIOS

The relative financial condition and operating efficiency of co-operative elevator associations may be judged by the use of business ratios for comparing their financial statements. Although a complete analysis cannot be made by examining and comparing particular ratios, a check of the relationships which exist between the basic elements and functions of the business, through use of business-ratio analysis, may reveal underlying bases for financial difficulties and indicate where specific problem areas lie. Definite conclusions, however, cannot be drawn from financial ratios alone.

A ratio shows the relationship between two quantities and is derived by dividing one of the quantities by the other. The divisor is considered as the base and is usually stated as unit one or one hundred. For example, if the relationship is as three is to one, it would be shown mathematically as a ratio of 3:1.

Ratio analysis, as used in this thesis, is the calculation of numerical relationships between items on the balance sheet, items on the operating statement, and between items of the two statements. These ratios are then compared to ratios of like businesses or to certain standards. Since business management is a dynamic science it is almost impossible to state exactly what the numerical value of a given ratio should be for any one organization. In order to have a standard

to which the management of individual elevators may make comparisons, averages for each ratio for each group were computed. This average represents a standard which local management may use to compare their individual operations with the operations of similar elevators.

Ratios were used because a comparison of the absolute figures from the financial reports would not give a true financial picture of the organizations if they were handling different volumes of business. This is also true in comparing a single elevator's financial reports over a period of years. In all probability an elevator's volume of business and plant facilities will not be the same over an extended time, consequently the use of ratio analysis will permit a more logical comparison of financial statements than could be otherwise obtained. Thirteen ratios were selected for analyzing and comparing the business and operating efficiency of the elevators in this study.

PART I

BALANCE SHEET RATIOS

Balance sheet ratios, also referred to as financial ratios, give an indication of the financial position of a business at a given time. These ratios are useful tools since they reveal certain strong and weak points in the financial structure of a business. The following balance sheet ratios were computed for the 39 elevators.

1. Current ratio (current assets to current liabilities).
2. Acid-test ratio (current assets minus inventory to current liabilities).
3. Net worth to total assets.

4. Net worth to fixed assets.

5. Net worth to total liabilities.

6. Accounts receivable to current assets.

Current Ratio

For a long time the current ratio has been the banker's rule-of-thumb test. A banker likes to see a business statement that shows two dollars of current assets for each dollar of current liabilities.[1] With a current ratio of 2 to 1, current assets can shrink 50 percent and still current liabilities can be met and the solvency of the business maintained. Current ratio is simply a measure of the ability of the elevator to meet current obligations. It is calculated as follows:

$$\frac{\text{Current Assets}}{\text{Current Liabilities}} = \text{Current Ratio.}$$

Group I. The current ratio was favorable for all elevators in Group I. Each elevator was above the recommended ratio of 2 to 1; the highest current ratio was 76.61 to 1 (Table 16). This ratio was high because elevator "9" had a small amount of current liabilities compared with its current assets, and had no current liabilities in 1953. Elevator "4" with 2.04 to 1 had the lowest current ratio of the group. This was because current liabilities were large in comparison with current assets.

Group II. All elevators of Group II had favorable current ratios. The current ratio of elevator "18", 81.70 to 1, was high because of small current liabilities (Table 17). In 1955, this elevator had no current liabilities. Elevator "16" had the lowest current ratio because of its large current liabilities compared with its small current assets.

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[1] R. M. Green and Vance M. Rucker, Marketing Problems of Farmer Cooperatives in Kansas, Kansas State College Extension Service Circular No. 106 (Manhattan, 1934), pp. 10-11.

TABLE 16

RELATIONSHIP OF CURRENT ASSETS TO CURRENT LIABILITIES, GROUP I, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
1	10.58:1	8.33:1	7.69:1	8.87:1
2	8.78:1	20.91:1	10.79:1	13.49:1
3	9.14:1	25.45:1	44.76:1	26.45:1
4	2.59:1	1.87:1	1.66:1	2.04:1
5	2.98:1	10.99:1	4.30:1	6.09:1
6	- -	4.81:1	- -	4.81:1
7	31.70:1	16.42:1	10.30:1	19.47:1
8	7.17:1	23.01:1	6.05:1	12.08:1
9	- -	102.62:1	50.60:1	76.61:1
10	7.84:1	28.59:1	4.08:1	13.50:1
Group Average	10.10:1	24.30:1	15.58:1	18.34:1

TABLE 17

RELATIONSHIP OF CURRENT ASSETS TO CURRENT LIABILITIES
GROUP II, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954,
AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
11	14.35:1	2.55:1	9.17:1	8.69:1
12	2.96:1	12.10:1	4.75:1	6.60:1
13	20.73:1	78.34:1	141.93:1	80.33:1
14	2.18:1	20.54:1	23.60:1	15.44:1
15	- -	17.18:1	- -	17.18:1
16	2.36:1	3.81:1	4.39:1	3.52:1
17	20.85:1	22.54:1	3.45:1	15.61:1
18	45.89:1	117.50:1	- -	81.70:1
19	4.09:1	4.94:1	11.29:1	6.77:1
20	9.54:1	11.66:1	3.93:1	8.38:1
21	24.09:1	16.17:1	8.70:1	16.32:1
22	13.47:1	20.24:1	16.39:1	16.70:1
23	17.87:1	21.28:1	90.12:1	43:09:1
24	27.52:1	25.21:1	15.95:1	22.89:1
25	29:81:1	20.06:1	7.93:1	19.27:1
26	2.14:1	3.13:1	10.66:1	5.31:1
27	7.53:1	9.54:1	8.59:1	8.55:1
28	11.99:1	11.43:1	23.13:1	15.52:1
29	8.88:1	8.78:1	10.83:1	9.50:1
Group Average	29.58:1	42.70:1	49.35:1	40.14:1

Group III. All elevators of Group III had a favorable current ratio. The high ratio of elevator "33" was a result of low current liabilities compared with current assets, and the low ratio of elevator "32" was caused by large current liabilities compared with current assets. (Table 18.)

The current ratio averaged 18.50 to 1 for all elevators during the 3-year period.[2] The average ratio was 13.06 to 1 in 1953, 21.23 to 1 in 1954, and 18.28 to 1 in 1955. Not one elevator fell below the recommended 2 to 1 ratio. There were only 9 elevators, or 24.32 percent, with average ratios above the average ratio for all elevators. Three of these elevators were in Group I, 5 from Group II, and one from Group III.

Current ratios of the elevators under study increased with gross sales until sales amounted to approximately $450,000.00. Beyond this point, there was a tendency for the current ratio to decrease as gross sales increased. This happened because as gross sales increased up to $450,000, current liabilities and assets also increased, but current assets increased at a faster rate. Beyond gross sales of $450,000 current liabilities increased at a faster rate than current assets. The higher this ratio, the better the financial condition of the elevator.

Current ratio can be over-emphasized and there are some dangers in relying on its use alone. Excessively high ratios may not always be indicative of good business practices. If current assets, for example, consist largely of cash on hand and in the bank, boards of directors may be tempted to invest in luxury items or to declare unwarranted dividends.

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[2] Because two elevators reported no current liabilities, only 37 elevators were used in computing this average.

TABLE 18

RELATIONSHIP OF CURRENT ASSETS TO CURRENT LIABILITIES, GROUP III, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
30	1.95:1	6.65:1	9.17:1	5.92:1
31	9.16:1	4.49:1	3.82:1	5.82:1
32	4.70:1	5.03:1	4.51:1	4.75:1
33	45.53:1	36.21:1	37.83:1	39.86:1
34	- -	- -	- -	- -
35	- -	- -	- -	- -
36	9.13:1	14.51:1	7.69:1	10.44:1
37	10.73:1	24.23:1	2.36:1	12.44:1
38	7.35:1	11.26:1	12.47:1	10.36:1
39	8.35:1	13.00:1	8.68:1	10.01:1
Group Average	12.11:1	14.42:1	10.82:1	12.45:1

The ratio may be excessively large merely because there are few current liabilities, or because of no current liabilities at all as was the case with a few of the elevators in this study. In these cases, current ratio has limited value as an analytical factor.

The composition of current assets has a bearing upon the use of this ratio for analysis purposes. When current assets are made up largely of inventory and accounts receivable, they are good only to the degree to which these items can be turned into their cash value. The inventory turnover, as will be discussed later, gives an indication of how reliable current assets are and whether the current ratio is suitable for use in analyzing the financial condition of an elevator.

Acid-Test Ratio

This ratio also measures the ability of a business to meet short-term debt. In determining the acid-test ratio, consideration is given only to those assets which could be easily converted into cash if the need should arise. These assets include cash, receivables, and marketable securities. Converting an inventory into cash is sometimes a long-time process; therefore, it is subtracted from current assets in computing the acid-test ratio. A ratio of 1 to 1, or 100 percent, is usually deemed favorable.[3] The acid-test ratio is calculated as follows:

$$\frac{\text{Current Assets minus Inventory}}{\text{Current Liabilities}} = \text{Acid-Test Ratio}$$

Group I. All elevators of Group I had ratios above the recommended acid-test ratio of 1 to 1 (Table 19). Elevator "9", because of its low

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[3]Howard S. Noble, Accounting Principles, (Cincinnati, 1945), p. 634.

TABLE 19

RELATIONSHIP OF CURRENT ASSETS MINUS INVENTORY TO CURRENT LIABILITIES, GROUP I, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
1	8.43:1	6.54:1	5.63:1	6.87:1
2	7.22:1	13.25:1	8.73:1	9.73:1
3	6.14:1	19.52:1	34.27:1	19.98:1
4	1.55:1	.90:1	.79:1	1.08:1
5	1.18:1	6.94:1	2.58:1	3.57:1
6	- -	3.76:1	- -	3.76:1
7	27.20:1	13.94:1	8.70:1	16.61:1
8	5.85:1	20.16:1	3.28:1	9.76:1
9	- -	92.56:1	43.21:1	67.88:1
10	6.31:1	24.30:1	3.22:1	11.28:1
Group Average	7.98:1	20.19:1	12.27:1	15.05:1

current liabilities (it did not have any current liabilities in 1953) had the highest ratio. Because of its high current liabilities, elevator "4" had the lowest ratio. These two elevators also had the highest and lowest current ratios, respectively, of Group I elevators.

Group II. Elevators "18" and "16," respectively, had the highest and lowest acid-test ratios (Table 20). Elevator "18" had low current liabilities with no current liabilities listed for 1955, and elevator "16" had high current liabilities compared to its current assets. These two elevators also had the highest and lowest current ratios of the elevators in Group II.

Group III. Elevator "33" had the highest acid-test ratio (Table 21) because of its low current liabilities compared with its current assets. Because of its high current liabilities, elevator "32" had the lowest ratio. These two elevators had the highest and lowest current ratios of any of the elevators in this group.

The acid-test ratio averaged 13.52 to 1 for all elevators during the 3-year period.[4] The average ratio was 9.66 to 1 in 1953, 16.10 to 1 in 1954, and 12.60 to 1 in 1955. Only 10 elevators, or 27.03 percent, had average ratios above the average ratio for all elevators of the study. Three of these were from Group I, 6 from Group II, and 1 from Group III.

All the elevators of this study had ratios above the recommended 1 to 1 ratio. As might be expected, the acid-test ratio varied concurrently with the current ratio. In each group, the same elevators had the highest and the lowest ratios for both the acid-test ratio and

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[4] Because two elevators reported no current liabilities, only 37 elevators were used in computing this average.

TABLE 20

RELATIONSHIP OF CURRENT ASSETS MINUS INVENTORY TO CURRENT LIABILITIES, GROUP II, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
11	14.04:1	2.21:1	7.69:1	7.98:1
12	1.80:1	7.63:1	2.66:1	4.03:1
13	12.49:1	55.57:1	74.02:1	47.36:1
14	2.03:1	18.71:1	20.91:1	13.88:1
15	- -	13.32:1	- -	13.32:1
16	1.04:1	1.65:1	1.10:1	1.26:1
17	15.03:1	12.47:1	1.59:1	6.70:1
18	31.13:1	99.09:1	- -	65.11:1
19	2.83:1	2.61:1	5.45:1	3.63:1
20	7.73:1	9.28:1	3.65:1	6.89:1
21	23.31:1	15.30:1	7.92:1	15.51:1
22	8.71:1	14.02:1	11.44:1	11.39:1
23	15.01:1	17.19:1	76.07:1	36.09:1
24	21.03:1	17.67:1	10.83:1	16.51:1
25	21.44:1	11.38:1	4.56:1	12.46:1
26	1.82:1	2.04:1	5.96:1	3.27:1
27	7.05:1	8.82:1	6.69:1	7.52:1
28	9.46:1	7.69:1	16.13:1	7.85:1
29	6.39:1	6.07:1	8.02:1	6.83:1
Group Average	22.48:1	32.27:1	33.09:1	28.76:1

TABLE 21

RELATIONSHIP OF CURRENT ASSETS MINUS INVENTORY TO CURRENT LIABILITIES, GROUP III, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, and 1955

Elevator Code No.	1953	1954	1955	Three Year Average
30	.80:1	2.54:1	4.31:1	2.55:1
31	7.11:1	3.59:1	3.19:1	4.63:1
32	2.16:1	2.80:1	2.30:1	2.42:1
33	30.02:1	22.02:1	24.85:1	25.63:1
34	- -	- -	- -	- -
35	- -	- -	- -	- -
36	6.83:1	10.62:1	6.05:1	7.83:1
37	4.19:1	12.20:1	1.20:1	5.86:1
38	4.02:1	6.13:1	5.23:1	5.13:1
39	6.98:1	11.31:1	5.98:1	8.09:1
Group Average	7.77:1	8.90:1	6.64:1	7.77:1

the current ratio. This relationship is understandable since, basically, the same items are used in computing both ratios. Care should be used in making decisions based upon this ratio since it is dependent upon a number of variables. Two of these variables are: (1) whether the notes payable must be paid in the near future or whether they can be renewed, and (2) the time required to realize on receivables.

Net Worth to Total Assets

The ratio of net worth to total assets expressed the relationship between the capital furnished by the members and the total of all capital used by the business. This ratio is sometimes referred to as the patron's equity ratio and gives an indication of the elevator's ability to meet its long-term obligations. A ratio of 50 to 100 is recommended for cooperatives with a large amount of fixed assets, and a ratio of 70 to 100 for cooperatives with little or no fixed assets.[5] Because of their large fixed assets, most elevators should have a ratio of 50 to 100. However, the members should strive for 100 percent asset ownership. This ratio is calculated as follows:

$$\frac{\text{Net Worth}}{\text{Total Assets}} = \text{Ratio of Net Worth to Total Assets.}$$

Group I. All the elevators were in a favorable position so far as the relationship of net worth to total assets was concerned. Elevator "5" had the most favorable ratio, net worth was 90 percent of total assets (Table 22). This means that the members financed 90 percent of

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[5]Clifford Alston, Agricultural Cooperatives - Analyses of Financial Statements, University of Arkansas Agricultural Extension Service Circular No. 471 (Little Rock, 1951), p. 11.

TABLE 22

RELATIONSHIP OF NET WORTH TO TOTAL ASSETS, GROUP I, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
1	78:100	89:100	83:100	83:100
2	53:100	69:100	78:100	67:100
3	98:100	73:100	91:100	87:100
4	53:100	51:100	51:100	52:100
5	84:100	94:100	93:100	90:100
6	58:100	59:100	53:100	57:100
7	92:100	56:100	73:100	74:100
8	91:100	75:100	49:100	72:100
9	65:100	64:100	80:100	70:100
10	96:100	70:100	61:100	76:100
Group Average	77:100	70:100	71:100	73:100

the total assets. Elevator "4" had the least favorable ratio because the patrons financed little more than 50 percent of the total assets. In the case of elevator "5" liabilities were very small, and for elevator "4" liabilities were high compared to net worth.

Group II. In Group II, elevator "21" had the most favorable ratio. Only 3 percent of its total assets were financed by creditors (Table 23). This ratio was high mainly because mortgages amounted to only one dollar. The least favorable ratios were those of elevators "16" and "17". The large amounts for mortgages are the principle reason for these ratios being so low; however, in the case of elevator "16" a large amount of current liabilities was an important factor.

Group III. Of the ten elevators in Group III, elevator "35" had the most favorable net worth to total assets relationship because it had only one dollar of mortgages and its other liabilities were small (Table 24). The lowest ratio was for elevator "34". This ratio was low because of the high amount of mortgage indebtedness.

The ratio of net worth to total assets averaged 77 to 100 for all 39 elevators during this period. The average ratio was 78 to 100 in 1953, 75 to 100 in 1954, and 80 to 100 in 1955. Twenty or 51.3 percent of the elevators had average ratios above the average ratio for all elevators. Of the 20, three were from Group I, 10 from Group II, and 7 from Group III.

All the elevators of this study had average ratios above the recommended 50 to 100 for the ratio of net worth to total assets. The study revealed that this ratio increased with gross sales. As gross sales increased, more patronage refunds were due members. Because of the business

TABLE 23

RELATIONSHIP OF NET WORTH TO TOTAL ASSETS, GROUP II, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
11	97:100	75:100	88:100	87:100
12	70:100	84:100	80:100	78:100
13	75:100	83:100	94:100	84:100
14	59:100	63:100	93:100	72:100
15	78:100	97:100	99:100	91:100
16	55:100	57:100	59:100	57:100
17	46:100	69:100	56:100	57:100
18	83:100	64:100	72:100	73:100
19	86:100	63:100	76:100	75:100
20	85:100	82:100	91:100	86:100
21	97:100	96:100	98:100	97:100
22	91:100	67:100	79:100	79:100
23	98:100	85:100	65:100	61:100
24	60:100	59:100	65:100	61:100
25	98:100	74:100	85:100	86:100
26	71:100	85:100	98:100	85:100
27	82:100	95:100	96:100	91:100
28	79:100	59:100	67:100	68:100
29	81:100	58:100	68:100	69:100
Group Average	78:100	74:100	80:100	77:100

TABLE 24

RELATIONSHIP OF NET WORTH TO TOTAL ASSETS, GROUP III, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
30	56:100	87:100	91:100	78:100
31	74:100	92:100	91:100	86:100
32	74:100	56:100	77:100	69:100
33	92:100	95:100	98:100	95:100
34	44:100	61:100	79:100	61:100
35	96:100	96:100	99:100	97:100
36	97:100	93:100	93:100	94:100
37	70:100	68:100	63:100	67:100
38	84:100	85:100	77:100	82:100
39	92:100	95:100	95:100	94:100
Group Average	78:100	83:100	86:100	82:100

practice of the elevators to hold patronage refunds for a few years, members' equities were increased from year to year. Members were able to buy more stock in the elevator and the surplus reserves were increased.

Net Worth to Fixed Assets

This ratio indicates the relationship between the capital invested in the elevator by its members and the permanent investment of the elevator in facilities and equipment. It is considered a sound principle of finance for the members (owners) of an elevator to supply all the funds invested in fixed assets, and, in addition, part of the working capital. A ratio of 1.5 to 1 is considered standard.[6] A ratio of 1 to 1 is sufficient to cover fixed assets, but as stated previously, good financing requires a part of the working capital to be furnished by members. A ratio larger than 1 to 1 indicates that the owners have provided capital in excess of fixed assets for other capital needs. The higher this ratio, the greater the amount of capital furnished by the stock-holders. Because of differences in policies as to rates of depreciation and the capitalization of expenditures for maintenance, replacement, and repairs, caution should be observed in using this ratio for comparison of one elevator with another. This ratio is calculated as follows:

$$\frac{\text{Net Worth}}{\text{Fixed Assets}} = \text{Ratio of Net Worth to Fixed Assets.}$$

Group I. Elevator "5" had the highest ratio because of the small investment in fixed assets compared to patrons' investments (Table 25).

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[6] Green and Rucker, p. 19.

TABLE 25

RELATIONSHIP OF NET WORTH TO FIXED ASSETS, GROUP I, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
1	1.29:1	1.52:1	1.42:1	1.41:1
2	.81:1	1.31:1	1.63:1	1.25:1
3	1.51:1	1.20:1	1.73:1	1.48:1
4	1.26:1	1.26:1	1.37:1	1.30:1
5	2.18:1	2.30:1	2.10:1	2.19:1
6	.88:1	.96:1	.82:1	.89:1
7	1.99:1	.98:1	1.43:1	1.47:1
8	2.49:1	2.59:1	.74:1	1.94:1
9	1.22:1	1.19:1	1.48:1	1.30:1
10	3.43:1	1.11:1	1.02:1	1.85:1
Group Average	1.71:1	1.44:1	1.37:1	1.51:1

Elevator "6" had the least favorable ratio because of the large investment in fixed assets compared to net worth. Investments in fixed assets were greater than investments of members in the business.

Group II. Because of its large amount of net worth compared to its investment in fixed assets, elevator "21" had the most favorable ratio (Table 26). With its fixed assets larger than net worth, elevator "17" had the lowest ratio.

Group III. The ratio of elevator "35" was high because investments by patrons more than doubled investments in fixed assets. The least favorable ratio was that of elevator "32" (Table 27). Even though this ratio was the lowest, it still was above the recommended ratio of 1 to 1 and therefore considered favorable.

The ratio of net worth to fixed assets averaged 1.60 to 1 for all elevators for the 3-year period. In 1953 the average ratio was 1.63 to 1; in 1954, 1.53 to 1; in 1955, 1.65 to 1. The average ratio for all 39 elevators was 1.60 to 1. Fourteen or 35.9 percent of the elevators had ratios above the average ratio for all elevators of the group and one equaled the average ratio. Group I had 3 elevators above the average, Group II had 5, and 6 were from Group III.

Twenty elevators, a little over 50 percent, had average ratios below the recommended 1.50 to 1. Of this number, 7 were in Group I, 10 in Group II, and 3 in Group III. During the period, 1953-55, only 2 elevators fell below the required 1 to 1 ratio necessary to cover fixed assets. This is an indication that fixed assets increased faster than member equity and capital.

TABLE 26

RELATIONSHIP OF NET WORTH TO FIXED ASSETS, GROUP II, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
11	1.83:1	1.09:1	1.39:1	1.44:1
12	1.59:1	1.78:1	2.04:1	1.80:1
13	1.13:1	1.39:1	1.47:1	1.33:1
14	.99:1	1.41:1	2.22:1	1.54:1
15	1.10:1	1.49:1	1.61:1	1.40:1
16	.91:1	.95:1	1.16:1	1.01:1
17	.68:1	1.05:1	.78:1	.84:1
18	1.80:1	1.23:1	1.44:1	1.49:1
19	2.70:1	1.20:1	1.49:1	1.80:1
20	1.35:1	1.44:1	1.52:1	1.44:1
21	2.21:1	2.45:1	2.09:1	2.25:1
22	2.01:1	1.16:1	1.44:1	1.54:1
23	2.41:1	2.04:1	1.25:1	1.90:1
24	1.04:1	1.03:1	1.25:1	1.11:1
25	2.29:1	1.17:1	1.54:1	1.67:1
26	1.42:1	1.56:1	1.66:1	1.55:1
27	1.36:1	1.69:1	1.71:1	1.59:1
28	1.37:1	.91:1	1.23:1	1.17:1
29	1.53:1	.87:1	1.08:1	1.16:1
Group Average	1.56:1	1.36:1	1.49:1	1.48:1

TABLE 27

RELATIONSHIP OF NET WORTH TO FIXED ASSETS, GROUP III, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
30	2.01:1	2.73:1	4.44:1	3.06:1
31	1.73:1	2.26:1	2.47:1	2.15:1
32	1.34:1	.90:1	1.38:1	1.21:1
33	1.98:1	2.00:1	2.44:1	2.14:1
34	.69:1	1.34:1	1.64:1	1.22:1
35	2.47:1	2.59:1	2.70:1	2.59:1
36	1.60:1	2.01:1	1.75:1	1.79:1
37	1.34:1	1.36:1	1.60:1	1.43:1
38	1.53:1	1.69:1	1.57:1	1.60:1
39	2.06:1	2.53:1	2.19:1	2.26:1
Group Average	1.68:1	1.94:1	2.22:1	1.94:1

Net Worth to Total Liabilities

This ratio, sometimes called the worth-debt ratio, measures the relation of members' equities in the elevators to creditors' claims against the assets of the elevator. A high ratio is an indication of a strong financial structure. The total net worth should equal, but preferably should exceed, total liabilities. This indicates that there is more owner than creditor capital in the business. The recommended ratio is 1.50 to 1.[7] This ratio is calculated as follows:

$$\frac{\text{Net Worth}}{\text{Total Liabilities}} = \text{Ratio of Net Worth to Total Liabilities.}$$

Group I. Elevator "3" had the highest ratio (Table 28). Its net worth was twice as large as any other elevator of the group, while its total liabilities were just a little more than the average for the group. The mortgage indebtedness of this elevator also influenced the ratio. Elevator "3", which had only one dollar of mortgage indebtedness in 1953, borrowed more than 80 thousand dollars in 1954 but by 1955 had repaid more than two-thirds of the total loan. Elevator "4" had the least favorable ratio, principally because it had the lowest net worth and the highest current liabilities of all elevators in its group.

Group II. Elevator "15" (Table 29) had the highest ratio because it had no current liabilities in 1953 and 1955. It also had the highest amount of net worth. Elevator "16" had the lowest ratio because it had the least amount of net worth. This elevator's total liabilities were high principally because of its high current liabilities.

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[7] Ibid., p.19.

TABLE 28

RELATIONSHIP OF NET WORTH TO TOTAL LIABILITIES, GROUP I, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
1	3.50:1	7.98:1	4.86:1	5.45:1
2	1.14:1	2.28:1	3.60:1	2.34:1
3	46.47:1	2.69:1	9.85:1	19.67:1
4	1.16:1	1.04:1	1.05:1	1.08:1
5	5.37:1	16.95:1	1.36:1	7.89:1
6	1.37:1	1.42:1	1.14:1	1.31:1
7	11.20:1	1.28:1	2.67:1	5.05:1
8	3.52:1	3.22:1	.97:1	2.57:1
9	1.86:1	1.75:1	4.10:1	2.57:1
10	25.05:1	2.30:1	1.58:1	9.64:1
Group Average	10.06:1	4.09:1	3.12:1	5.76:1

TABLE 29

RELATIONSHIP OF NET WORTH TO TOTAL LIABILITIES, GROUP II, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
11	34.37:1	3.04:1	7.31:1	14.91:1
12	2.37:1	6.44:1	4.00:1	4.27:1
13	3.05:1	4.84:1	16.93:1	8.27:1
14	1.43:1	1.71:1	1.28:1	1.47:1
15	3.62:1	27.59:1	99.34:1	43.52:1
16	1.23:1	1.31:1	1.44:1	1.33:1
17	.85:1	2.20:1	1.25:1	1.43:1
18	4.91:1	1.77:1	2.63:1	3.10:1
19	6.40:1	1.68:1	3.21:1	3.76:1
20	5.51:1	4.69:1	9.87:1	6.69:1
21	37.52:1	24.56:1	4.04:1	22.04:1
22	10.36:1	2.00:1	3.66:1	5.34:1
23	49.10:1	5.55:1	1.86:1	18.84:1
24	1.53:1	1.42:1	1.90:1	1.62:1
25	40.19:1	2.78:1	5.48:1	16.15:1
26	2.46:1	5.73:1	4.54:1	4.24:1
27	4.58:1	18.70:1	21.29:1	14.86:1
28	3.81:1	1.41:1	2.19:1	2.47:1
29	4.29:1	1.40:1	2.15:1	2.61:1
Group Average	11.45:1	6.25:1	10.23:1	9.31:1

Group III. Elevator "35" had the highest ratio because it had no current liabilities in 1953 and 1955. This elevator had the smallest amount of total liabilities and the fourth highest net worth. The smallest ratio was that of elevator "34". This elevator had the largest amount of total liabilities, more than half of which was in the form of mortgages.

The ratio of net worth to total liabilities averaged 8.80 to 1 for all elevators for the 3-year period. In 1953 the average was 10.41 to 1; in 1954, 6.86 to 1; and 9.12 to 1 in 1955. Only 5 elevators were below the recommended ratio of 1.50 to 1. Of the 5 below the recommended ratio, 2 were in Group I and 3 were in Group II. Using the average as a standard, 28 or 71.79 percent of all the elevators in the study fell below the average ratio of 8.80 to 1. An explanation of why more than 50 percent of the elevators fell below the average ratio is found through examination of the liabilities. Some elevators reported no current liabilities at all; others reported only very small amounts. This gave these elevators a very high ratio, in one case as high as 43.52 to 1.

Accounts Receivables to Current Assets

Accounts receivable are one of the most important items on the balance sheet. They are usually expensive, and sometimes prove to be uncollectible. For this reason all elevators should endeavor to operate on a cash basis, if possible, and eliminate all, or nearly all, accounts receivable. The measure of the relationship between accounts receivable and current assets is commonly referred to as the ratio of accounts receivable to current assets. This ratio should be below 40 to 100; the lower the ratio the better the financial position of the elevator from

TABLE 30

RELATIONSHIP OF NET WORTH TO TOTAL LIABILITIES, GROUP III, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
30	1.27:1	7.94:1	10.01:1	6.41:1
31	2.90:1	11.83:1	9.83:1	8.19:1
32	2.87:1	1.29:1	3.26:1	2.47:1
33	1.76:1	19.86:1	4.63:1	8.75:1
34	.78:1	1.58:1	3.72:1	2.03:1
35	23.97:1	26.02:1	69.70:1	39.90:1
36	30.52:1	12.64:1	3.68:1	15.61:1
37	2.33:1	2.18:1	1.72:1	2.08:1
38	5.33:1	5.67:1	3.26:1	4.75:1
39	15.97:1	18.67:1	20.36:1	18.33:1
Group Average	8.77:1	10.77:1	13.02:1	10.85:1

this standpoint. This ratio is calculated as follows:

$$\frac{\text{Accounts Receivable}}{\text{Current Assets}} = \text{Ratio of Accounts Receivable to Current Assets.}$$

Group I. The highest ratio of accounts receivable to current assets was that of elevator "9". Seventy-five percent of the current assets were accounts receivable. Normally this percentage would be too high, but a check of the balance sheet revealed that the Union Equity Co-operative Exchange and the Commodity Credit Corporation were the source of the receivables. Receivables with strong organizations such as these are usually as good as "money in the bank." Elevator "1" had the lowest ratio because its receivables were small compared with its current assets. From the standpoint of this measurement, it was in the best position, credit wise, of all the elevators of this group.

Group II. The least favorable ratio was that of elevator "20" (Table 32). Sixty-two percent of its current assets were in the form of accounts receivable. Elevator "16," which had the most favorable ratio, had only 25 percent of its current assets in the form of receivables.

Group III. Elevator "31" had the least favorable ratio in Group III (Table 33). Relative to its current assets its receivables were the largest of the elevators of this group. Elevator "37," which had a very conservative credit policy, had the smallest amount of receivables of any elevator in the group.

The average ratio of the elevators in this study was 39 to 100. It was 40 to 100 in 1953, 42 to 100 in 1954, and 35 to 100 in 1955. There were 15 elevators, or 38.5 percent, above the recommended ratio of 40 to 100, one equaled it, and the other 23 were below it. Four of the

TABLE 31

RELATIONSHIP OF ACCOUNTS RECEIVABLE TO CURRENT ASSETS, GROUP I, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
1	25:100	29:100	23:100	26:100
2	43:100	51:100	25:100	40:100
3	41:100	47:100	51:100	46:100
4	50:100	39:100	39:100	43:100
5	19:100	42:100	38:100	33:100
6	16:100	46:100	21:100	28:100
7	31:100	71:100	58:100	53:100
8	40:100	18:100	44:100	34:100
9	74:100	80:100	71:100	75:100
10	28:100	15:100	53:100	32:100
Group Average	37:100	44:100	42:100	41:100

TABLE 32

RELATIONSHIP OF ACCOUNTS RECEIVABLE TO CURRENT ASSETS, GROUP II, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
11	18:100	40:100	25:100	28:100
12	35:100	41:100	41:100	39:100
13	50:100	44:100	21:100	38:100
14	34:100	35:100	25:100	31:100
15	68:100	73:100	38:100	60:100
16	20:100	34:100	20:100	25:100
17	51:100	36:100	31:100	39:100
18	41:100	64:100	25:100	43:100
19	59:100	35:100	43:100	46:100
20	47:100	52:100	88:100	62:100
21	84:100	31:100	38:100	51:100
22	26:100	47:100	33:100	35:100
23	35:100	33:100	38:100	35:100
24	46:100	69:100	49:100	55:100
25	21:100	52:100	29:100	34:100
26	71:100	31:100	30:100	44:100
27	66:100	47:100	24:100	46:100
28	18:100	52:100	15:100	28:100
29	46:100	52:100	45:100	48:100
Group Average	44:100	46:100	35:100	41:100

TABLE 33

RELATIONSHIP OF ACCOUNTS RECEIVABLE TO CURRENT ASSETS, GROUP III, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
30	50:100	28:100	34:100	34:100
31	76:100	72:100	57:100	68:100
32	12:100	43:100	31:100	29:100
33	14:100	22:100	24:100	20:100
34	72:100	63:100	40:100	58:100
35	08:100	07:100	14:100	10:100
36	58:100	20:100	37:100	38:100
37	06:100	10:100	05:100	07:100
38	23:100	30:100	14:100	22:100
39	50:100	37:100	30:100	39:100
Group Average	36:100	33:100	29:100	33:100

elevators which had a ratio above 40 to 100 were in Group I, 9 were in Group II, and 2 were in Group III. Using the averages obtained from the study as the standard, 16 of the 39 elevators, or 41 percent, were above the group average of 39 to 100, 3 equaled it, and 20 were below the average.

Before making a decision based on this ratio, a check should be made of the items that comprise accounts receivable. Some accounts receivable may be extremely reliable, but others may be somewhat doubtful. Such was the case with a number of the elevators of this study. A check of the balance sheets revealed large amounts charged to the Union Equity Cooperative Exchange and Commodity Credit Corporation (CCC). In all probability, these accounts would be paid. Consequently, a larger ratio due to such accounts is both understandable and permissable. Taking this into consideration, the average ratios of the groups were not too large.

PART II

OPERATING STATEMENT RATIOS

The data in the operating statements of an elevator may be evaluated by the use of ratios. Operating statement ratios are often referred to as sales or management ratios. The operating statement reveals those phases of the business that are most directly affected by the policies and practices of the management. The analysis of the operating statement by means of ratios may disclose the extent to which success or failure of the elevator is due to the efficiency of management. The term management is used here in its broad sense to include not only the

manager, who is responsible for the administration of policies, but also the board of directors and members who are responsible for the establishment of policies. Due to differences in credit policies, commodities handled, volume of business, costs, and many other differences, the use of ratios is limited to general comparisons between similar elevators. The following operating statement ratios were computed for 39 elevators:

1. Gross earnings to gross sales.
2. Operating expenses to gross sales.
3. Net earnings to gross sales.
4. Cost of goods sold to average inventory (inventory turnover*).

Gross Earnings to Gross Sales

This ratio expresses the relationship between gross earnings and volume of business. Gross earnings include gross earnings on commodities plus gross operating earnings. The terms gross earnings, gross margins, and gross profits are used interchangeably. The gross earnings to gross sales ratio is of significance because it is a direct measure of the spread between buying and selling prices determined by competitive conditions and is unaffected by actual operating expenses. The spread should be large enough to cover all expenses and leave some savings for the members. This margin should not be so large that it will drive away customers, nor so small that it will not cover expenses. Since margins are governed by competition, at least to a degree, a "moderate"

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*Inventory turnover is listed by most authors as a combined balance sheet--operating statement ratio. The reason for classifying it as an operating statement ratio only is explained later under the title "Inventory Turnover."

rate of gross margin is the most favorable. This particular ratio is calculated as follows:

$$\frac{\text{Gross Earnings}}{\text{Gross Sales}} = \text{Ratio of Gross Earnings to Gross Sales.}$$

Group I. Elevator "3," which had the highest gross earnings of the group, also had the highest ratio of gross earnings to gross sales. The gross earnings were high because of the large amount of operating income. The lowest ratio was that of elevator "5" because its gross earnings were small relative to its sales.

Group II. The most favorable ratio was that of elevator "13" (Table 35). This elevator had the largest amount of gross earnings. Elevator "26" had the least favorable ratio because its sales were the largest of the group and its gross earnings were the smallest.

Group III. Elevator "39" which had the largest gross earnings, had the most favorable ratio of all elevators in Group III (Table 36). Because it had the second highest amount of sales and the second lowest amount of gross earnings, elevator "30" had the smallest ratio of gross earnings to gross sales.

The average ratio for all elevators included in this study for the 3-year period was 18.95 to 100 or 18.95 cents per dollar of sales. The average ratio was 16.89 to 100 in 1953, 20.31 to 100 in 1954, and 19.67 to 100 in 1955. Seventeen elevators, 43.6 percent, had margins above the average ratio for all elevators. Four of these elevators were in Group I, 10 in Group II, and 3 in Group III.

This ratio indicated that gross earnings increased at a faster rate than gross sales until gross sales totaled about $450,000. Beyond this point, gross sales increased at a faster rate than gross earnings. As

TABLE 34

RELATIONSHIP OF GROSS EARNINGS TO GROSS SALES, GROUP I, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
1	19.3:100	15.7:100	17.2:100	17.4:100
2	15.0:100	11.1:100	10.3:100	12.1:100
3	28.4:100	37.3:100	53.2:100	39.6:100
4	11.1:100	12.8:100	11.6:100	11.8:100
5	9.6:100	1.16:100	4.7:100	8.6:100
6	4.4:100	16.9:100	12.0:100	11.1:100
7	13.2:100	23.5:100	27.4:100	21.4:100
8	16.0:100	15.9:100	19.2:100	17.0:100
9	22.8:100	33.2:100	27.3:100	27.8:100
10	18.3:100	21.6:100	20.2:100	20.0:100
Group Average	15.8:100	20.0:100	20.3:100	18.7:100

TABLE 35

RELATIONSHIP OF GROSS EARNINGS TO GROSS SALES, GROUP II, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
11	16.3:100	27.1:100	18.2:100	20.5:100
12	16.6:100	23.3:100	19.4:100	19.8:100
13	27.7:100	45.8:100	47.0:100	40.2:100
14	14.3:100	20.4:100	22.7:100	19.1:100
15	24.6:100	36.1:100	13.0:100	25.6:100
16	12.4:100	14.8:100	14.4:100	13.9:100
17	15.5:100	23.5:100	9.9:100	16.3:100
18	15.0:100	20.8:100	32.0:100	22.6:100
19	9.7:100	18.9:100	35.6:100	21.4:100
20	23.5:100	48.6:100	31.9:100	34.7:100
21	18.4:100	13.6:100	8.2:100	13.4:100
22	11.1:100	17.0:100	23.9:100	17.3:100
23	34.5:100	14.6:100	25.6:100	24.9:100
24	13.0:100	14.5:100	21.5:100	16.3:100
25	19.8:100	18.1:100	16.3:100	18.1:100
26	18.8:100	6.7:100	4.0:100	9.8:100
27	19.6:100	19.9:100	11.7:100	17.1:100
28	12.6:100	20.3:100	16.0:100	16.3:100
29	28.8:100	30.0:100	30.4:100	29.7:100
Group Average	18.5:100	23.0:100	21.1:100	20.9:100

TABLE 36

RELATIONSHIP OF GROSS EARNINGS TO GROSS SALES, GROUP III, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
30	4.4:100	8.1:100	7.3:100	6.6:100
31	19.0:100	12.6:100	21.2:100	17.6:100
32	8.8:100	10.1:100	12.5:100	10.5:100
33	27.4:100	21.1:100	16.5:100	21.7:100
34	6.8:100	7.6:100	26.9:100	13.8:100
35	17.7:100	14.5:100	10.2:100	14.1:100
36	18.6:100	18.5:100	15.5:100	17.5:100
37	7.3:100	9.9:100	5.3:100	7.5:100
38	10.6:100	29.1:100	18.3:100	19.3:100
39	27.9:100	23.8:100	28.8:100	26.8:100
Group Average	14.8:100	15.5:100	16.2:100	15.5:100

stated previously, an evaluation based upon the use of this ratio should be made with a knowledge of the existing competitive situation -- whether the margins are so high that they discourage patronage or so low that they do not cover costs adequately. A margin which would strike a "happy medium" somewhere between these two would be preferable.

Operating Expenses to Gross Sales

This ratio, also referred to as the operating ratio, shows the relationship between cost of doing business and the volume of business. Operating expenses are the total of all expenses involved in the operation of the elevator, and do not include "other deductions" as listed on the operating statement. Caution should be exercised when this ratio is used for direct comparisons between different elevators. Variations in accounting practices, types of business activities, credit policies, and other factors affect the cost of doing business. Within elevators, this ratio is an important measure of the relative cost of doing business from year to year. Operating expenses should be checked closely by management because they may reflect existing "leaks" in the operation of the elevator. Elevator operators should strive to minimize operating expenses, but not at the sacrifice of remaining financially sound. This ratio is calculated as follows:

$$\frac{\text{Operating Expenses}}{\text{Gross Sales}} = \text{Ratio of Operating Expenses to Gross Sales}$$

Group I. Elevator "2" with the largest sales and the third smallest operating expenses, had the most favorable ratio of the elevators in this group. Elevator "10" had the highest ratio because it had the fourth lowest sales and the second highest operating expenses.

TABLE 37

RELATIONSHIP OF OPERATING EXPENSES TO GROSS SALES, GROUP I, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
1	8.9:100	7.9:100	13.5:100	10.1:100
2	8.5:100	5.4:100	8.1:100	7.3:100
3	10.4:100	12.2:100	12.2:100	11.6:100
4	8.8:100	11.4:100	10.2:100	10.1:100
5	7.6:100	8.3:100	11.8:100	9.2:100
6	7.4:100	19.2:100	8.4:100	11.7:100
7	7.1:100	11.2:100	9.6:100	9.3:100
8	9.1:100	8.0:100	12.0:100	9.7:100
9	15.0:100	11.3:100	12.9:100	13.1:100
10	8.9:100	11.2:100	24.0:100	14.7:100
Group Average	9.2:100	10.6:100	12.3:100	10.7:100

Group II. Elevator "14" had the lowest ratio of operating expenses to gross sales because it had the lowest amount of operating expenses (Table 38). Elevator "23" had the least favorable ratio because of its high operating expenses relative to its sales. This elevator was third lowest in sales and third highest in operating expenses.

Group III. By combining the second highest sales with the third lowest operating expenses, elevator "30" had the most favorable ratio of any elevator in this group. Elevator "33" with the third lowest sales and the highest operating expenses, had the highest ratio of operating expenses to gross sales.

During the 3-year period, 1953-55, operating expenses amounted to 10.26 cents for each dollar of business transacted. There were 12 elevators, or 30.77 percent, with ratios above the average ratio for all elevators of the study. Four of these elevators were in Group I, 7 in Group II, and 1 in Group III.

The data indicated that up to gross sales of $450,000.00 operating expenses increase at a faster rate than gross sales. Beyond this point gross sales increase at a faster rate than operating expenses.

Although the operating ratio is not a measure of financial conditions, it is a yardstick by which the comparative operating efficiency of an elevator may be judged. Generally speaking, a low operating ratio in any particular line of business is a favorable indication, and a high operating ratio is an unfavorable indication.

Net Earnings to Gross Sales

This ratio is used to show the relationship of net income to volume of business. If businesses have comparable pricing and credit policies, this ratio is an excellent guide for comparing earning efficiency. Net

TABLE 38

RELATIONSHIP OF OPERATING EXPENSES TO GROSS SALES, GROUP II, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
11	7.6:100	10.6:100	6.2:100	8.1:100
12	15.0:100	20.4:100	15.2:100	16.9:100
13	10.7:100	15.9:100	20.2:100	15.6:100
14	4.6:100	6.0:100	5.2:100	5.3:100
15	10.2:100	12.1:100	7.5:100	9.9:100
16	3.1:100	13.8:100	10.5:100	9.1:100
17	7.1:100	8.8:100	7.8:100	7.9:100
18	11.2:100	8.2:100	17.6:100	12.3:100
19	7.1:100	9.1:100	15.4:100	10.5:100
20	11.3:100	17.6:100	11.9:100	13.6:100
21	5.9:100	4.5:100	9.0:100	6.5:100
22	6.2:100	7.9:100	10.4:100	8.2:100
23	36.5:100	12.4:100	20.9:100	23.3:100
24	8.8:100	7.8:100	12.6:100	9.7:100
25	10.7:100	10.8:100	7.4:100	9.6:100
26	13.7:100	8.4:100	4.7:100	8.9:100
27	8.9:100	8.2:100	10.3:100	9.1:100
28	7.6:100	9.6:100	6.6:100	7.9:100
29	19.1:100	17.2:100	16.5:100	17.6:100
Group Average	10.8:100	11.0:100	11.4:100	11.1:100

TABLE 39

RELATIONSHIP OF OPERATING EXPENSES TO GROSS SALES, GROUP III, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
30	3.1:100	4.1:100	3.9:100	3.7:100
31	7.9:100	5.4:100	13.4:100	8.9:100
32	6.9:100	7.4:100	6.6:100	8.6:100
33	16.5:100	17.9:100	9.8:100	14.7:100
34	4.3:100	3.4:100	16.9:100	8.2:100
35	8.6:100	6.7:100	7.1:100	7.5:100
36	11.8:100	6.2:100	11.2:100	9.7:100
37	3.7:100	5.7:100	4.5:100	4.6:100
38	6.6:100	9.7:100	7.9:100	8.1:100
39	10.9:100	7.1:100	10.5:100	9.5:100
Group Average	8.0:100	7.4:100	9.2:100	8.2:100

earnings are the residual after all expenses have been deducted from all receipts. The net earnings to sales ratio is significant because it is the outcome of all business activity. Maladjustments in any of the fundamental functions of the business affect the net earnings and usually will be reflected in an unfavorable net earnings to sales ratio. However, it is possible that one unfavorable factor may be counter-balanced by an especially favorable situation in some other factor; hence the net earnings to sales ratio will not be distorted. A thorough ratio analysis of the entire business will, however, reveal any unusual situations existing within a particular elevator. Net earnings are an important factor affecting membership morale and should be observed closely. An unfavorable ratio is a signal for an elevator to examine its basic activities and policies relative to turnover of inventories and receivables, relationships of volume of sales to plant investment, gross margins and purchasing policies, and direct expense and overhead charges. The ratio is computed as follows:

$$\frac{\text{Net Earnings}}{\text{Gross Sales}} = \text{Ratio of Net Earnings to Gross Sales.}$$

Group I. Elevator "3" had the most favorable ratio with 22.4 cents of each dollar of sales becoming net earnings. This elevator also had the largest net earnings. Elevator "4" had the least net earnings and the lowest ratio. Its net earnings were low because its patronage refund was less than $500.

Group II. Elevator "13", which had the highest patronage refund and the greatest net earnings of any elevator in this group, had the most favorable ratio (Table 41). With the third lowest net earnings and the second highest sales, elevator "16" had the lowest ratio.

TABLE 40

RELATIONSHIP OF NET EARNINGS TO GROSS SALES, GROUP I, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
1	10.3:100	9.2:100	4.1:100	7.9:100
2	10.2:100	10.3:100	9.4:100	10.0:100
3	23.5:100	14.2:100	29.5:100	22.4:100
4	1.7:100	1.0:100	9.0:100	1.2:100
5	7.0:100	9.9:100	1.1:100	6.0:100
6	3.5:100	1.1:100	8.5:100	4.4:100
7	14.6:100	3.0:100	9.8:100	9.1:100
8	15.0:100	15.0:100	2.4:100	10.8:100
9	12.7:100	15.4:100	2.1:100	10.1:100
10	5.7:100	9.3:100	4.5:100	6.5:100
Group Average	10.4:100	8.8:100	7.2:100	8.8:100

TABLE 41

RELATIONSHIP OF NET EARNINGS TO GROSS SALES, GROUP II, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
11	15.3:100	22.6:100	10.2:100	16.0:100
12	15.0:100	2.4:100	3.9:100	7.1:100
13	22.2:100	31.6:100	26.3:100	26.7:100
14	15.7:100	10.2:100	15.1:100	13.7:100
15	21.4:100	19.9:100	4.6:100	15.3:100
16	0.5:100	1.3:100	3.3:100	1.7:100
17	10.2:100	15.7:100	4.7:100	10.2:100
18	8.2:100	9.3:100	1.5:100	6.3:100
19	6.4:100	7.6:100	10.3:100	8.1:100
20	18.6:100	25.1:100	18.3:100	20.7:100
21	16.4:100	13.8:100	3.7:100	11.3:100
22	8.5:100	10.4:100	9.5:100	9.5:100
23	8.6:100	10.7:100	0.5:100	6.6:100
24	7.7:100	5.1:100	3.5:100	5.4:100
25	12.2:100	8.5:100	5.9:100	8.9:100
26	7.2:100	2.1:100	0.5:100	3.3:100
27	12.9:100	13.8:100	7.6:100	11.4:100
28	9.3:100	11.5:100	8.8:100	9.9:100
29	12.1:100	6.7:100	7.6:100	8.8:100
Group Average	12.0:100	12.0:100	7.7:100	10.6:100

Group III. Elevator "39" had the highest net earnings and the most favorable ratio of net earnings to gross sales (Table 42). Elevator "30," with the least favorable ratio, had the second highest sales and the second lowest net earnings.

During the 3-year period, the average ratio of net earnings to gross sales for all elevators was 9.96 to 100 or 9.96 cents out of each dollar of business handled. Average ratios were: 10.98 to 100 in 1953, 10.80 to 100 in 1954, and 7.83 to 100 in 1955. There were 17 elevators, or 43.59 percent, with 3-year average ratios above the 3-year average ratio for all elevators in the study. Four of these elevators were in Group I, 8 in Group II and 5 in Group III.

Net earnings appeared to have the same relationship to gross sales as gross earnings and operating expenses had to gross sales. Net earnings increased at a faster rate than gross sales until gross sales reached $450,000.00; beyond this point gross sales increased at a faster rate than net earnings.

Inventory Turnover

Inventory turnover is listed by most writers as a combined balance sheet - operating statement ratio. This ratio should be considered as an operating statement ratio because all the items needed in its computation are found, or should be found, in the operating statement. In computing inventory turnover, cost of sales and average inventory for the year are needed. Although it is agreed that the figure for the cost of sales comes from the operating statement, there is a difference of opinion as to the source of average inventory. Average inventory is

TABLE 42

RELATIONSHIP OF NET EARNINGS TO GROSS SALES, GROUP III, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
30	1.2:100	3.7:100	3.4:100	2.8:100
31	15.3:100	10.1:100	10.3:100	11.9:100
32	3.8:100	3.0:100	5.1:100	4.0:100
33	10.3:100	11.0:100	7.2:100	9.5:100
34	4.8:100	5.5:100	3.6:100	4.6:100
35	16.0:100	10.8:100	9.9:100	12.2:100
36	15.7:100	15.1:100	11.0:100	13.9:100
37	3.2:100	5.3:100	16.5:100	8.3:100
38	6.8:100	19.8:100	9.9:100	12.2:100
39	18.7:100	20.2:100	20.3:100	19.7:100
Group Average	9.6:100	10.4:100	9.7:100	9.9:100

computed by adding the beginning and ending inventories and dividing by two. This average cannot be obtained from the balance sheet because the balance sheet has only the ending inventory. The average inventory, however, can be obtained quickly from a complete operating statement because such a statement will list both the beginning and the closing inventory. If the inventory obtained from the balance sheet is used in computing inventory turnover, the inventory turnover figure would be inaccurate.

The inventory turnover ratio indicates the relationship of the cost of sales for the period to the cost of goods carried in stock for sale. The main value of this particular ratio is to indicate the number of times during the year that the inventories were converted into sales. This gives a clue to the use that is made of capital for operating purposes. A high ratio is indicative that the capital is at work, while a low ratio shows that the elevator is handling slow-moving goods or that a large amount of capital is tied up in inventory. Since gross margins are usually established by competitive conditions, the faster the rate of inventory turnover the greater will be the gross returns upon the capital invested in inventories.

The desired rapidity of the turnover for a commodity is governed by the size of the gross margin that can be obtained from the commodity. If the item yields a small gross margin it should have a large turnover, but if its gross margin is large a smaller yearly turnover may be satisfactory. The importance of this ratio is that it shows the relative period of time that will be required to convert inventories into sales, and the amount of capital which will be required to finance inventories for a given volume of business. This ratio is computed as follows:

$$\frac{\text{Cost of Goods Sold}}{\text{Average Inventory}} = \text{Inventory Turnover.}$$

Group I. Elevator "2," which had the highest cost of sales and the lowest average inventory of any elevator in the group, had the highest inventory turnover. Elevator "3," with the highest average inventory and one of the lowest figures for cost of goods sold, had the lowest rate of inventory turnover.

Group II. The large turnover for elevator "21" may be due, in part, to the way its rate of turnover was computed. Since its operating statement did not contain beginning and ending inventories, the inventory figure used was taken from the balance sheet. This was only the ending inventory and not an average inventory figure. Elevator "12," with the lowest cost of sales and one of the largest average inventories of the group, had the smallest inventory turnover.

Group III. Elevator "34," which had only one department and which handled only wheat, had the largest turnover of any elevator in the group. In contrast, elevator "38" had six departments and a very low rate of turnover. As the number of departments increased above four, the tendency was for inventory turnover to decrease.

The average turnover ratio for all elevators for the 3-year period was 31.17 to 1. The yearly ratios were 33.65 to 1 in 1953, 37.72 to 1 in 1954, and 22.14 to 1 in 1955. There were only 8 elevators, or 20.5 percent, above the average ratio for all elevators. Two of these elevators were from Group I, 4 from Group II, and 2 from Group III.

The data indicated that inventory turnover increased as gross sales increased. An examination of the audits revealed two reasons for this apparent trend. First, some elevators reduced their inventories to low

TABLE 43

RELATIONSHIP OF COST OF GOODS SOLD TO AVERAGE INVENTORY, GROUP I, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
1	19.1:1	21.5:1	14.6:1	18.4:1
2	45.9:1	39.7:1	20.2:1	35.3:1
3	11.1:1	16.7:1	12.7:1	13.5:1
4	20.1:1	15.8:1	15.9:1	17.3:1
5	12.9:1	24.4:1	22.4:1	19.9:1
6	22.6:1	18.8:1	21.5:1	21.0:1
7	21.8:1	29.8:1	32.5:1	28.0:1
8	27.0:1	31.7:1	11.9:1	23.5:1
9	17.8:1	19.4:1	20.4:1	19.2:1
10	27.1:1	37.6:1	32.4:1	32.4:1
Group Average	22.5:1	25.5:1	20.4:1	22.8:1

TABLE 44

RELATIONSHIP OF COST OF GOODS SOLD TO AVERAGE INVENTORY, GROUP II, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
11	16.4:1	23.4:1	47.6:1	29.1:1
12	10.1:1	10.0:1	11.8:1	10.6:1
13	100.0:1	77.5:1	4.9:1	60.8:1
14	23.5:1	56.3:1	44.1:1	41.3:1
15	28.9:1	22.0:1	5.6:1	18.8:1
16	15.7:1	13.7:1	13.2:1	14.2:1
17	23.6:1	17.6:1	16.4:1	19.2:1
18	12.9:1	23.2:1	13.9:1	16.7:1
19	12.2:1	61.1:1	4.7:1	26.0:1
20	17.4:1	13.7:1	62.0:1	31.0:1
21	138.1:1	89.5:1	54.7:1	94.1:1
22	17.6:1	16.8:1	13.6:1	16.0:1
23	16.0:1	27.7:1	23.9:1	22.5:1
24	19.4:1	24.6:1	12.4:1	18.8:1
25	10.4:1	15.2:1	17.6:1	14.4:1
26	14.5:1	23.5:1	33.6:1	23.9:1
27	109.0:1	87.3:1	25.4:1	73.9:1
28	29.5:1	19.4:1	20.2:1	23.0:1
29	13.9:1	16.9:1	15.3:1	15.4:1
Group Average	33.1:1	33.7:1	23.2:1	30.0:1

TABLE 45

RELATIONSHIP OF COST OF GOODS SOLD TO AVERAGE INVENTORY, GROUP III, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
30	29.1:1	26.4:1	27.3:1	27.6:1
31	31.6:1	58.7:1	19.2:1	36.5:1
32	24.7:1	30.0:1	37.2:1	30.6:1
33	9.3:1	7.8:1	15.1:1	10.7:1
34	264.4:1	372.9:1	39.1:1	225.5:1
35	10.9:1	18.0:1	19.2:1	16.0:1
36	34.3:1	14.8:1	26.2:1	25.1:1
37	24.0:1	16.5:1	18.3:1	19.6:1
38	11.8:1	8.1:1	7.6:1	9.2:1
39	17.7:1	23.0:1	8.8:1	16.5:1
Group Average	45.8:1	57.6:1	21.8:1	41.7:1

figures at the end of the year, and in some cases the audits failed to list a beginning and ending inventory. The second reason for this trend was that turnover was influenced by the number of departments. The higher the number of departments, the lower the average turnover. The elevator in Group III that influenced the average most, by having an average ratio of 225.5 to 1, had only one department and that was wheat. The policy of maintaining an equality between sales and purchases in the wheat department results in a small inventory and a large turnover.

The risk of loss from price fluctuations, spoilage, and obsolescence increases with the length of time inventories are carried in stock. The costs of carrying inventories, such as warehouse space, finance charges, insurance, and taxes, increase per unit as the rate of turnover decreases. A relatively large ratio value reflects a rapid turnover and indicates efficient merchandising providing the gross margin and credit situations are in good order. Improvement of an unfavorable situation in either inventory turnover or gross margins should be made by adjusting the merchandising practices on various individual items rather than by making comparable "across the board" adjustments on all commodities handled.

PART III

BALANCE SHEET-OPERATING STATEMENT RATIOS

Balance sheet-operating statement ratios are often called dynamic ratios. These ratios are derived from comparison of amounts, one of which is derived from the balance sheet and one of which is derived from the operating statement. Through the use of these ratios it is possible to measure the relationship between items affecting the financial

position of the elevator and items affecting the policies and practices of management. Three balance sheet-operating statement ratios were computed:

1. Net earnings to net worth.
2. Sales to fixed assets.
3. Sales to total assets (capital turnover).

Net Earnings to Net Worth

This ratio measures the relationship of net savings to members' equity. It is important because it indicates how successfully the total investment of the members is being employed. Since it indicates the earning power of the elevator in relation to invested capital, all investors and potential investors are interested in this ratio. In the long run, the returns realized on such an investment should exceed the returns on sound securities.

A number of variable factors affect this ratio. Some of these are: (1) type of business, (2) gross earnings, (3) operating policies, and (4) economic conditions in general. The computation of this ratio is as follows:

$$\frac{\text{Net Earnings}}{\text{Net Worth}} = \text{Ratio of Net Earnings to Net Worth.}$$

Group I. Elevator "2" (Table 46) returned its members 29.4 cents for every dollar they had invested in it. This elevator had the second highest net earnings of the group. Elevator "10" had the lowest ratio because it had the third smallest net earnings and one of the largest net worth figures.

Group II. Elevator "17" had the second smallest net worth (Table 47). The relationship of this small net worth to its net earnings

TABLE 46

RELATIONSHIP OF NET EARNINGS TO NET WORTH, GROUP I, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
1	19.0:100	16.9:100	6.6:100	14.2:100
2	32.2:100	37.5:100	18.5:100	29.4:100
3	21.6:100	12.3:100	22.4:100	18.8:100
4	18.6:100	7.0:100	8.1:100	11.2:100
5	38.2:100	39.4:100	2.8:100	26.8:100
6	15.6:100	2.2:100	29.8:100	15.9:100
7	22.8:100	4.3:100	14.7:100	13.9:100
8	26.0:100	22.8:100	2.9:100	17.2:100
9	14.6:100	19.2:100	2.3:100	12.0:100
10	14.4:100	12.3:100	6.8:100	6.6:100
Group Average	22.3:100	17.4:100	10.1:100	16.6:100

TABLE 47

RELATIONSHIP OF NET EARNINGS TO NET WORTH, GROUP II, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
11	20.0:100	20.7:100	14.8:100	18.5:100
12	4.9:100	6.9:100	13.2:100	8.3:100
13	24.0:100	24.3:100	13.8:100	20.7:100
14	33.7:100	17.3:100	21.8:100	24.3:100
15	23.0:100	17.3:100	6.7:100	15.7:100
16	2.9:100	6.3:100	16.0:100	8.4:100
17	42.6:100	35.7:100	12.9:100	30.4:100
18	10.3:100	16.3:100	1.4:100	9.3:100
19	13.8:100	11.2:100	10.2:100	11.7:100
20	21.1:100	18.4:100	20.3:100	19.9:100
21	23.8:100	26.1:100	3.6:100	17.8:100
22	19.7:100	19.9:100	12.5:100	17.4:100
23	5.0:100	16.8:100	0.5:100	7.1:100
24	17.0:100	13.7:100	5.8:100	12.2:100
25	18.7:100	15.5:100	13.4:100	15.9:100
26	11.3:100	4.8:100	1.8:100	6.0:100
27	22.1:100	23.7:100	9.7:100	18.5:100
28	17.3:100	18.1:100	18.6:100	18.0:100
29	19.7:100	11.3:100	12.0:100	14.3:100
Group Average	18.5:100	17.1:100	10.9:100	15.5:100

resulted in the large ratio figure. Elevator "26" had the second smallest net earnings. This, coupled with its large net worth, gave it the smallest ratio of net earnings to net worth.

Group III. Elevator "30", which had the smallest net worth dollarwise, had the most favorable ratio of the elevators in this group. Because of its large net worth in relation to its net earnings, elevator "33" had the smallest ratio. This elevator had the fifth highest net worth and the fifth lowest net earnings.

The ratio of net earnings to net worth averaged 17.45 to 100 for all elevators during the years, 1953-55. This means that members received a return of 17.45 cents for every dollar they had invested in the elevator. The average ratio was 20.60 to 100 in 1953, 19.58 to 100 in 1954, and 12.18 to 100 in 1955. Twenty elevators, 51.28 percent, were above the average ratio for all elevators. Three of these elevators were from Group I, 8 from Group II, and 9 from Group III.

This is the only ratio, of all ratios computed, that showed the effects of wheat production over the 3-year period. In 1953, the best wheat production year, this ratio was highest for all groups, and in 1955, the poorest wheat production year, this ratio was lowest for all groups. Net earnings decreased with production, therefore this ratio decreased.

Gross Sales to Fixed Assets

This ratio shows the relationship between volume of business and fixed assets after depreciation. It is an indication of the rapidity with which investment in fixed assets is being turned. This ratio can show undesirable situations by being either too high or too low. When

TABLE 48

RELATIONSHIP OF NET EARNINGS TO NET WORTH, GROUP III, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
30	26.6:100	43.5:100	35.1:100	35.1:100
31	36.4:100	32.4:100	11.4:100	26.7:100
32	18.7:100	14.2:100	22.8:100	18.6:100
33	16.2:100	15.5:100	18.4:100	16.7:100
34	23.4:100	35.4:100	3.1:100	20.6:100
35	26.0:100	22.6:100	18.1:100	22.2:100
36	26.4:100	22.2:100	12.5:100	20.4:100
37	20.4:100	26.3:100	9.7:100	18.8:100
38	14.8:100	26.1:100	15.5:100	18.8:100
39	20.7:100	27.3:100	19.1:100	22.3:100
Group Average	23.0:100	26.6:100	16.6:100	22.1:100

the ratio is relatively low, it may mean that too great an investment in fixed assets has been made relative to the volume of business for which they are used. A high ratio is not necessarily indicative of business efficiency. It may be due to a policy of permitting the fixed assets to depreciate without any attempt to rebuild, repair, or keep them in satisfactory condition. Eventually such a policy would result in inadequate facilities for efficient operation of the business.

The ratio of sales to fixed assets is especially useful for new elevators and those considering expansion. This is true because the acquiring of more facilities than are necessary for the operation of an elevator may be just as unfortunate and costly as the payment of an excessive price for facilities. If elevators lease a large part of their fixed assets this ratio will be high; however, the operating expense ratio, reflecting rental payments, will likely be higher. This ratio is calculated as follows:

$$\frac{\text{Gross Sales}}{\text{Fixed Assets}} = \text{Ratio of Sales to Fixed Assets.}$$

Group I. Elevator "4" had the highest ratio because of its small fixed assets in relation to sales (Table 49). This elevator had the least amount of fixed assets of any elevators in the group. Its fixed assets were low because there were not any investments in elevator buildings and equipment. Elevator "3" had the largest investment in fixed assets and the smallest gross sales - fixed asset ratio. Its fixed assets were largest because it had the largest investment in elevator buildings and equipment.

Group II. Elevator "12", which had the smallest total investment in fixed assets and third-smallest investment in elevator buildings and

TABLE 49

RELATIONSHIP OF GROSS SALES TO FIXED ASSETS, GROUP I, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
1	2.4:1	2.8:1	2.3:1	2.4:1
2	2.6:1	4.8:1	3.2:1	3.5:1
3	1.4:1	1.0:1	1.3:1	1.2:1
4	13.7:1	9.2:1	11.7:1	11.5:1
5	11.9:1	9.1:1	5.4:1	8.8:1
6	3.9:1	1.8:1	2.9:1	2.9:1
7	3.1:1	1.4:1	2.1:1	2.2:1
8	4.3:1	3.9:1	.9:1	3.0:1
9	1.4:1	1.5:1	1.6:1	1.5:1
10	8.6:1	4.0:1	1.5:1	4.7:1
Group Average	5.3:1	4.0:1	3.3:1	4.2:1

equipment, had the highest ratio of this group (Table 50). Because it had the largest investment in fixed assets, elevator "13" had the smallest ratio. Its fixed assets were large because of the investment in elevator buildings and equipment.

Group III. With the smallest investment in fixed assets and the second highest sales, elevator "30" had the highest ratio (Table 51). This elevator had the smallest investment in elevator buildings and equipment. Elevators "36" and "39," both of which had a ratio of 2.5 to 1, had the lowest ratios of any elevator. As a result of having the highest investment in elevator buildings and equipment, these two elevators had the highest investments in fixed assets.

The average ratio of gross sales to fixed assets for all elevators during the 3-year period was 4.47 to 1. This means that there were $4.47 in sales for every dollar of net fixed assets. The average ratios were 4.98 to 1 in 1953, 4.17 to 1 in 1954, and 4.30 to 1 in 1955. There were 10 elevators, or 25.64 percent of all elevators studied, which had higher than average ratios. Three of these elevators were in Group I, 2 were in Group II, and 5 were in Group III.

All the elevators except two had favorable gross sales to fixed assets ratios. One of these two exceptions was from Group I and had a ratio of 11.5 to 1; the other was from Group III and had a ratio of 40.4 to 1. Both of these elevators had very small amounts of fixed assets; this accounted for the high ratios. The management of these elevators should investigate the possibility of enlarging the investment in facilities in any one or all departments. If this is not feasible, the answer may be found through the addition of new sidelines and services.

TABLE 50

RELATIONSHIP OF GROSS SALES TO FIXED ASSETS, GROUP II, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
11	2.4:1	1.0:1	2.0:1	1.8:1
12	5.6:1	5.1:1	6.9:1	5.9:1
13	1.2:1	1.1:1	.8:1	1.0:1
14	2.1:1	2.4:1	3.2:1	2.6:1
15	1.2:1	1.3:1	2.4:1	1.6:1
16	4.9:1	4.5:1	5.7:1	5.0:1
17	2.8:1	2.4:1	2.1:1	2.4:1
18	2.2:1	2.2:1	1.3:1	1.9:1
19	5.8:1	1.8:1	1.2:1	3.0:1
20	1.5:1	1.0:1	1.7:1	1.4:1
21	3.2:1	4.6:1	2.1:1	3.3:1
22	4.7:1	2.2:1	1.9:1	2.9:1
23	1.4:1	3.2:1	1.3:1	2.0:1
24	2.3:1	2.8:1	2.1:1	2.4:1
25	3.5:1	2.1:1	3.5:1	3.0:1
26	2.2:1	3.6:1	6.0:1	3.9:1
27	2.3:1	2.9:1	2.2:1	2.5:1
28	2.5:1	1.4:1	2.6:1	2.2:1
29	2.5:1	1.5:1	1.7:1	1.9:1
Group Average	2.9:1	2.3:1	2.7:1	2.6:1

TABLE 51

RELATIONSHIP OF GROSS SALES TO FIXED ASSETS, GROUP III, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
30	43.1:1	31.8:1	46.3:1	40.4:1
31	4.1:1	7.2:1	2.8:1	4.7:1
32	12.3:1	4.2:1	6.2:1	7.6:1
33	3.1:1	2.8:1	6.2:1	4.0:1
34	3.3:1	8.6:1	1.4:1	4.4:1
35	4.0:1	6.4:1	4.9:1	5.1:1
36	2.7:1	2.9:1	2.0:1	2.5:1
37	8.5:1	6.7:1	9.4:1	8.2:1
38	3.3:1	2.2:1	2.5:1	2.7:1
39	2.3:1	3.2:1	2.1:1	2.5:1
Group Average	8.7:1	7.6:1	8.4:1	8.2:1

Gross Sales to Total Assets

This ratio measures the rate of turnover of total capital employed and is known as capital turnover. It expresses the relationship of the volume of business to the total assets used in the business. This measure is important because it indicates the efficiency with which the capital invested in the business is being used. It also indicates the amount of capital that can be justified for a specified volume of business. This ratio is computed as follows:

$$\frac{\text{Gross Sales}}{\text{Total Assets}} = \text{Ratio of Gross Sales to Total Assets.}$$

Group I. Elevator "4," which had the smallest investment in total assets, had the highest capital turnover of any elevator in the group (Table 52). This elevator also had the least investments in current and fixed assets. The lowest rate of capital turnover was found with elevator "3," which had the greatest investment in total assets. The total assets were large primarily because of extra heavy investments in fixed assets, most of which were elevator buildings and equipment.

Group II. The largest capital turnover of any elevator in this group was that of elevator "16" (Table 53). This elevator had the second smallest total investment in assets and ranked second highest in total sales. Elevator "13," with the largest investment in total assets, had the smallest capital turnover.

Group III. By combining the second highest sales with the least investment in total assets, elevator "30" had the greatest rate of capital turnover of any elevator in this group (Table 54). It also had the least investment in fixed assets. Elevator "39," which had the greatest investment in fixed assets and the greatest investment in total assets, had the lowest rate of capital turnover.

TABLE 52

RELATIONSHIP OF GROSS SALES TO TOTAL ASSETS, GROUP I, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
1	1.4:1	1.6:1	1.3:1	1.4:1
2	1.7:1	2.5:1	1.5:1	1.9:1
3	.9:1	.6:1	.7:1	.7:1
4	5.7:1	3.7:1	4.4:1	4.6:1
5	4.6:1	3.7:1	2.4:1	3.6:1
6	2.5:1	1.1:1	1.9:1	1.8:1
7	1.4:1	.8:1	1.1:1	1.1:1
8	1.6:1	1.2:1	.6:1	1.1:1
9	.7:1	.8:1	.9:1	.8:1
10	2.4:1	.9:1	.9:1	1.4:1
Group Average	2.3:1	1.7:1	1.6:1	1.9:1

TABLE 53

RELATIONSHIP OF GROSS SALES TO TOTAL ASSETS, GROUP II, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
11	1.3:1	.7:1	1.3:1	1.1:1
12	2.5:1	2.4:1	2.7:1	2.5:1
13	.8:1	.6:1	.5:1	.6:1
14	1.3:1	1.1:1	1.3:1	1.2:1
15	.8:1	.8:1	1.4:1	1.0:1
16	3.0:1	2.7:1	2.9:1	2.9:1
17	1.9:1	1.6:1	1.5:1	1.7:1
18	1.0:1	1.1:1	.7:1	.9:1
19	1.9:1	.9:1	.8:1	1.2:1
20	1.0:1	.6:1	1.0:1	.9:1
21	1.4:1	1.8:1	1.0:1	1.4:1
22	2.1:1	1.3:1	1.0:1	1.5:1
23	.6:1	1.3:1	.7:1	.9:1
24	1.3:1	1.6:1	1.1:1	1.3:1
25	1.5:1	1.3:1	1.9:1	1.6:1
26	1.1:1	1.9:1	3.5:1	2.2:1
27	1.4:1	1.6:1	1.2:1	1.4:1
28	1.5:1	.9:1	1.5:1	1.3:1
29	1.3:1	1.0:1	1.1:1	1.1:1
Group Average	1.5:1	1.3:1	1.4:1	1.4:1

TABLE 54

RELATIONSHIP OF GROSS SALES TO TOTAL ASSETS, GROUP III, GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Elevator Code No.	1953	1954	1955	Three Year Average
30	12.0:1	10.2:1	9.5:1	10.6:1
31	1.8:1	2.9:1	1.0:1	1.9:1
32	3.6:1	2.6:1	3.5:1	3.2:1
33	1.4:1	1.3:1	2.5:1	1.7:1
34	2.1:1	4.0:1	.7:1	2.3:1
35	1.6:1	2.0:1	1.8:1	1.8:1
36	1.6:1	1.4:1	1.1:1	1.4:1
37	4.4:1	3.4:1	3.7:1	3.8:1
38	1.8:1	1.1:1	1.2:1	1.4:1
39	1.0:1	1.3:1	.9:1	1.1:1
Group Average	3.1:1	3.0:1	2.6:1	2.9:1

The average ratio of gross sales to total assets for the 3-year period, 1953-55, was 1.91 to 1, or $1.91 in sales to every dollar in total capital. The yearly average ratios were 2.10 to 1 in 1953, 1.85 to 1 in 1954, and 1.76 to 1 in 1955. There were 9 elevators, or 23.1 percent, with average ratios above the average ratio for all elevators. Two of these elevators were in Group I, 3 in Group II, and 4 in Group III.

The two elevators with the highest average ratios, 10.6 to 1 and 4.6 to 1, had small amounts of fixed assets. This caused their total assets to be comparatively small and resulted in a high ratio.

Uneconomical use of capital may be as inefficient as uneconomical use of labor, and it is much harder to correct. An unfavorable rate of capital turnover may be the result of several factors. Some of these factors are: (1) too small a volume of sales, (2) too much capital tied up in receivables, (3) too much capital invested in slow-moving inventories, and (4) over-investment in plant facilities. Elevators with large capital turnover ratios will be in a much better condition to show favorable earnings than those with small capital turnover ratios. Since competition tends to set limitations upon the amount of operating earnings an elevator may realize upon each dollar of sales, advantages to be gained through greater efficiency in the use of capital materially enhance the business to show favorable earnings.

Comparison of Average Standings of Six Elevators

To aid in the analysis and to show how the various ratio are related to each other, two elevators were chosen from each group and their standing in each ratio were shown.

Table 55 indicates that an elevator's standing in one ratio has no influence upon its standing in another ratio, unless the same items, or some of the same items, are used in the computation of both ratios. Because of this, each ratio must be considered separately in evaluating an elevator's relative financial and operating condition.

TABLE 55

COMPARISON OF AVERAGE STANDINGS OF RATIOS, 6 SELECTED GRAIN ELEVATORS, OKLAHOMA, 1953, 1954, AND 1955

Ratio	Group I 10 Elevators		Group II 19 Elevators		Group III 10 Elevators	
Elevator No.	"4"	"9"	"16"	"18"	"32"	"33"
Current Ratio	Last	1st	Last	1st	Last	1st
Acid Test Ratio	Last	1st	Last	1st	Last	1st
Net Worth to Total Assets	Last	7th	Last(tie)	13th	8th	2nd
Net Worth to Fixed Assets	7th(tie)	7th(tie)	18th	10th	Last	5th
Net Worth to Total Liabilities	Last	6th(tie)	Last	13th	8th	4th
Accounts Receivable to Current Assets	4th	Last	1st	9th	6th	8th
Gross Earnings on Sales	8th	2nd	17th	6th	8th	2nd
Operating Expenses to Gross Sales	5th(tie)	2nd	11th(tie)	6th	5th	Last
Net Earnings to Gross Sales	Last	3rd	Last	16th	9th	6th
Inventory Turnover	9th	7th	18th	14th	3rd	9th
Net Earnings to Net Worth	9th	8th	16th	15th	9th	Last
Sales to Fixed Assets	1st	9th	2nd	15th(tie)	3rd	7th
Capital Turnover	1st	9th	1st	16th(tie)	3rd	7th

CHAPTER V

RELATIONSHIP OF SELECTED ITEMS TO VARIOUS FACTORS OF THE ACCOUNTING STATEMENTS

This chapter treats the relationship of different items to various factors of the accounting statements. A knowledge of the interrelationship of items which appear on the accounting statements affords an opportunity for management to make more intelligent decisions. The items selected for comparison were (1) number of departments, (2) labor expense, (3) salaries, (4) inventory turnover, (5) capital turnover, (6) total gross margins on sales, (7) total gross margins on wheat sales, and (8) gross margin per bushel of wheat.

Number of Departments

In many instances grain marketing alone does not permit the most efficient use of elevator facilities and labor. By handling sidelines, facilities and labor may be used more efficiently throughout the year. Sidelines may be added to offset a small volume of business. In addition to increasing the volume of business, sidelines also aid in diversifying and stabilizing the business. In some instances it may be fruitful for an elevator to handle a sideline for accomodation purposes only. Important sidelines handled by the elevators in this study were feed, seed, coal, petroleum, farm supplies, and general merchandise. Several of the elevators also ground and mixed feeds.

Elevator managers are interested in knowing how far they should diversify their businesses by adding departments or sidelines. The relationship of the number of departments to selected factors is shown in Table 56. As the number of departments increased from 1 through 6, total assets increased. Total assets decreased slightly for elevators with 7 departments. Liabilities followed no definite trend. They were highest for elevators with 4 departments and lowest for elevators with 7 departments. Net worth and volume of sales increased with the number of departments. Gross earnings fluctuated slightly; the largest gross earnings were for elevators with 7 departments and the lowest for elevators with only one or two departments. The remaining factors failed to show definite trends in relation to the number of departments.

From the data obtained in this study, it was difficult to determine just what sidelines and how many sidelines an elevator should handle. A few important measures of operating efficiency suggested that an elevator with three departments was the most efficient. For example, elevators with three departments had: (1) the least expense per dollar of sales, averaging 8 cents; (2) the lowest total gross margins percentagewise, on sales, 3.35 percent; (3) the highest average total net earnings per dollar of average total labor expense, averaging $3.83; (4) the highest total net earning per dollar of total expense, with $1.73; (5) the second highest rate earned on investment, averaging 17.14 percent; and (6) the second highest average total sales per dollar of average total labor expense, averaging $29.59.

TABLE 56

RELATIONSHIP OF NUMBER OF DEPARTMENTS OF 39 OKLAHOMA COOPERATIVE ELEVATORS TO VARIOUS FACTORS, 1953, 1954, AND 1955

Factor	Number of Departments					
	1 - 2	3	4	5	6	7
Number of Elevators	5	6	7	10	7	4
Average Total Assets	$177,316.84	$261,638.81	$221,249.17	$226,092.10	$302,397.72	$301,157.96
Average Total Liabilities	55,750.46	46,044.51	47,514.31	47,175.94	57,094.58	33,605.16
Average Total Net Worth	121,566.38	215,593.45	163,734.86	179,108.76	245,445.99	267,552.79
Average Total Sales	301,766.59	342,249.10	344,618.75	343,060.14	414,003.53	489,342.47
Average Total Gross Earnings on Commodities	8,453,42	10,414.33	21,799.64	24,023.17	25,533.86	51,243.66
Average Total Gross Earnings	35,960.34	64,932.64	59,722.31	59,008.68	77,265.29	82,772.71
Average Total Expenses	22,386.71	27,180.22	33,343.00	29,500.00	40,506.91	44,453.26
Average Total Operating Earnings	13,573.63	37,752.42	26,379.31	29,508.68	3,675.84	38,319.46
Average Total Labor Expense	9,530.90	12,600.46	17,476.94	15,306.20	21,581.06	20,566.66
Average Total Labor Expense to Total Expense	42.91	45.90	52.59	51.84	54.11	47.78
Average Total Sales per Dollar of Labor Expense	29.62	29.59	19.91	23.04	20.83	24.28
Average Total Overhead Expense	7,088.50	7,948.45	9,047.96	7,718.24	10,140.27	11,865.57

TABLE 56 (CONTINUED)

RELATIONSHIP OF NUMBER OF DEPARTMENTS OF 39 OKLAHOMA COOPERATIVE ELEVATORS TO VARIOUS FACTORS, 1953, 1954, AND 1955

Factor	Number of Departments					
	1 - 2	3	4	5	6	7
Average Total Overhead Expense to Total Expense	32.15	29.93	27.18	26.72	25.26	25.55
Average Total Depreciation Expense	4,462.22	4,441.58	4,114.79	4,214.18	6,203.93	8,324.76
Average Total Depreciation Expense to Total Expense	19.19	16.46	12.26	14.44	14.48	18.27
Average Total License and Tax Expense	1,305.09	2,189.74	2,703.30	2,261.38	2,581.65	3,696.26
Average Total License and Tax Expense to Total Expense	5.75	7.71	7.97	7.01	6.16	8.40
Average Total Net Earnings	20,164.30	48,829.83	22,490.21	31,499.10	40,872.51	55,,910.46
Average Total Net Earnings per Dollar of Labor Expense	2.16	3.83	1.53	1.90	2.02	2.80
Average Total Net Earnings per Dollar of Total Expense	.96	1.73	.73	.95	1.03	1.34
Average Total Expense per Dollars of Sales	9¢	8¢	11¢	9¢	12¢	9¢
Average Gross Margins per Bushel of Wheat	3.52¢	4.71¢	8.55¢	5.20¢	2.91¢	15.75¢
Average Gross Margins on Total Sales (percent)	3.39	3.35	7.85	8.71	7.42	11.41
Average Gross Margins on Wheat Sales (percent)	.99	2.36	4.79	7.32	1.90	10.12
Average Rate Earned on Investment (percent)	11.50	17.14	9.43	13.56	14.03	18.10

Labor Expense

Expenses incurred by elevators varied considerably depending upon size of business, proportion of grain to sidelines, types of commodities and types of services performed. Labor, constituting about one-half the total of all expense, was the largest single item of expense. Average total labor expense ranged from $5,033.43 to $30,012.51 and averaged $16,403.81 for the 3-year period (Table 57). The wide variations were due principally to differences in volume of business. Variations in labor expense were also associated with the number of departments, the average total gross margins on sales, and the average total net earnings.

Sales increased until labor expense reached $25,000, thereafter they decreased. Except for the range of $10,001 to $15,000, the average gross margin on sales increased with average total labor expense. Average total net earnings increased until average total labor expense reached $25,000. Beyond this level of labor expense net earnings decreased.

Manager's Salary Expense

Manager's salary was the largest single labor expense, accounting for 13.45 percent of total operating expenses. Salaries ranged from $2,716.67 to $6,876.82 with an average of $4,395.20 (Table 58). Increases in managers' salaries were associated with increases in sales and the number of departments. Gross margins on sales and net earnings increased until salaries reached $5,500, then they decreased. The data indicated a direct relationship between gross sales and number of

TABLE 57

RELATIONSHIP OF LABOR EXPENSE OF 39 OKLAHOMA COOPERATIVE ELEVATORS TO VARIOUS FACTORS, 1953, 1954, AND 1955

Labor Expense Range	Labor Expense Average	No. of Elevators	Average Total Sales	No. of Departments	Average Gross Margins on Total Sales	Average Total Net Earnings	Average Gross Margins on Total Wheat Sales	Average Margins per bushel of Wheat
			(Dollars)		(percent)	(Dollars)	(percent)	(cents)
$ 5,033.43 - $10,000	$7,898.58	7	227,698.77	3	3.43	22,750.26	1.49	4.31
10,001.00 - 15,000	12,110.16	13	317,382.01	4	8.48	26,683.71	7.77	6.51
15,001.00 - 20,000	17,504.20	7	463,448.24	5	4.03	41,836.47	2.41	4.20
20,001.00 - 25,000	23,529.01	6	476,469.09	6	9.35	53,059.72	5.55	13.02
25,001.00 - 30,012.51	27,220.50	6	418,474.17	6	9.57	39,102.77	2.58	3.06

TABLE 58

RELATIONSHIP OF SALARY OF MANAGERS OF 39 OKLAHOMA COOPERATIVE ELEVATORS TO VARIOUS FACTORS, 1953, 1954, AND 1955

Salaries		No. of Managers	Average Total Sales	Average Total Net Earnings	Average No. of Depart-ments	Average Gross Margins on Total Sales	Average margins per bushel of Wheat	Average Gross Margins on Total Wheat Sales
Range	Average							
(Dollars)			(Dollars)	(Dollars)		(percent)	(cents)	(percent)
2,716.67 - 3,500	3,235.27	7	221,405.43	15,125.46	3	5.97	7.21	3.07
3,501.00 - 4,500	4,119.80	15	394,434.76	30,070.62	4	5.71	6.32	3.11
4,501.00 - 5,500	4,885.94	15	363,759.70	46,912.66	5	9.07	6.09	6.75
5,501.00 - 6,876.82	6,840.03	2	655,449.91	45,672.52	5	6.25	8.82	4.64

departments and managers' salaries. One reason for this apparent trend could be because that managers' responsibilities and duties increase as sales and departments increase.

Inventory Turnover

If it is assumed that the gross margin on similar commodities is reasonably well established by competition, a higher rate of inventory turnover would be accompanied by a greater gross return on the money invested in inventory. Due to variations in types and proportions of commodities handled, inventory data are only rough guides to business profitability.

Inventory turnover ranged from 9.2 to 225.5 and averaged 34.53 per year for the 3-year period (Table 59). The gross margin on sales was the only factor that showed a definite trend. As inventory turnover increased, average total gross margin on sales decreased. The number of departments tended to decrease as inventory turnover increased, except through the inventory turnover range of 24.1 to 29.0. The data indicated that inventory turnover had little or no effect upon managers' salaries.

Capital Turnover

Capital turnover is a measure of the efficiency with which the total investment in assets is being employed. A relatively high capital turnover affords a greater opportunity to realize favorable earnings on sales than does a lower turnover. Average total capital turnover ranged from .6 to 10.6 and averaged 3.2 (Table 60). The data did not reveal any definite trends in the relationship of the various factors to capital

TABLE 59

RELATIONSHIP OF INVENTORY TURNOVER OF 39 OKLAHOMA COOPERATIVE ELEVATORS TO VARIOUS FACTORS, 1953, 1954, AND 1955

Inventory Turnover		No. of Elevators	Average Total Sales	Average Total Net Earnings	Average Manager's Salary	Average Number of Depart-ments	Average Gross Margins on Total Sales	Average Margin per Bushel of Wheat	Average Gross Margin on Total Wheat Sales
Range	Average								
			(Dollars)	(Dollars)	(Dollars)		(Percent)	(Cents)	(Percent)
9.2 - 14.0	11.0	4	369,509.50	39,144.38	4,587.47	5	10.73	10.42	5.36
14.1 - 19.0	16.6	11	367,222.25	36,254.17	4,296.22	5	8.01	9.52	4.35
19.1 - 24.0	21.3	9	277,641.16	18,217.93	4,175.75	5	7.51	2.83	6.31
24.1 - 29.0	26.7	4	474,344.83	36,548.47	4,741.11	6	7.87	6.23	6.00
29.1 - 39.0	32.5	6	379,665.57	36,879.11	4,732.05	3	4.65	3.69	3.01
39.1 -225.5	99.1	5	410,205.77	53,033.80	4,173.26	3	3.74	5.39	2.69

TABLE 60

RELATIONSHIP OF CAPITAL TURNOVER OF 39 OKLAHOMA COOPERATIVE ELEVATORS TO VARIOUS FACTORS, 1953, 1954, AND 1955

Capital Turnover		No. of Elevators	Average Total Sales	Average Total Net Earnings	Average Manager's Salary	Average Number of Depart-ments	Average Gross Margin on Total Sales	Average Margin per Bushel of Wheat	Average Gross Margin on Total Wheat Sales
Range	Average		(Dollars)	(Dollars)	(Dollars)		(Percent)	(Cents)	(Percent)
.6 - 1.0	.8	7	288,316.23	46,184.55	4,478.91	5	8.95	2.71	8.15
1.1 - 2.0	1.4	23	347,797.12	37,949.89	4,489.62	4	6.35	7.38	4.22
2.1 - 3.0	2.5	4	448,645.10	17,664.95	3,968.44	4	7.74	3.63	.88
3.1 - 4.0	3.5	3	491,260.92	20,446.58	5,295.05	5	5.93	7.63	3.67
4.1 -10.6	7.6	2	473,872.06	11,916.72	3,765.06	5	9.32	14.73	5.66

turnover. Except for the range 3.1 to 4.0, average total net earnings decreased as capital turnover increased. Managers' salaries, number of departments, and average total gross margin on sales seemed to have no or little effect upon capital turnover.

Gross Margin on Sales

The amount of gross margin is important because it must cover expenses and net earnings. Average total gross margins on sales ranged from 1.27 percent to 36.30 percent (Table 61). None of the factors appeared to be associated with percent gross earnings. It is difficult to determine just what margin should be taken, but measures indicated that elevators which took margins between 7.28 percent and 9.27 percent were the most efficient. Elevators in this margin grouping earned the highest rate on investment, 17.06 percent, and had the greatest average total net earnings per dollar of average total labor expense and average total expense, with $3.43 and $1.66 respectively. Along with elevators in the gross margin range of 1.27 to 3.27 percent, these elevators had the least amount of expense per dollar of sales.

Gross Margin on Total Wheat Sales

Gross margins on wheat ranged from a loss of 3.62 cents to a gain of 47.68 cents per dollar of sales (Table 62). The size of the gross margin per bushel of wheat is important because in the long-run it must cover all wheat expenses. This margin should be computed for each sideline. None of the factors appeared to be associated with the amount of average gross margins on total wheat sales, however the margins taken

TABLE 61

RELATIONSHIP OF GROSS MARGIN OF 39 OKLAHOMA COOPERATIVE ELEVATORS TO VARIOUS FACTORS, 1953, 1954, AND 1955

Factor	Gross Margin as Percent of Total Sales					
	1.27-3.27	3.28-5.27	5.28-7.27	7.28-9.27	9.28-13.27	13.28-36.30
Average Gross Margin (percent)	2.27	4.20	6.31	8.23	11.57	20.63
Number of Elevators	9	9	9	4	4	4
Average Total Sales	$333,632.56	$298,178.58	$448,777.08	$449,455.66	$283,303.04	$396,581.49
Average Total Net Earnings	31,710.45	26,405.40	41,949.00	58,727.03	17,257.27	36,862.88
Average Total Assets	232,514.62	210,625.46	297,214.22	317,201.87	167,398.10	246,477.37
Average Total Liabilities	54,604.83	43,357.92	66,206.38	32,277.95	57,387.65	31,820.52
Average Total Net Worth	177,901.56	167,489.75	231,118.95	284,923.92	110,010.45	214,656.85
Average Total Purchases	300,648.75	225,943.20	439,710.25	357,514.58	254,696.88	202,014.12
Average Total Expenses	24,989.99	29,214.28	37,351.06	32,831.72	31,732.92	45,630.16
Average Total Labor Expense	11,524.96	13,574.65	19,935.05	16,143.24	18,069.22	22,547.56
Average Manager's Salary	3,886.45	4,295.63	5,019.34	4,689.52	4,043.34	4,417.19
Average Total Labor Expense to Total Expense	46.10	45.96	53.76	49.73	58.10	50.65
Average Total Net Earnings per Dollar of Total Expense	1.27	.98	1.11	1.66	.55	.81
Average Total Net Earnings per Dollar of Labor Expense	2.79	2.17	2.19	3.43	1.03	1.66
Average Total Expense per Dollar of Sales	8¢	10¢	9¢	8¢	11¢	13¢
Average Rate Earned on Investment (percent)	13.10	13.35	14.99	17.06	9.79	13.06

TABLE 62

RELATIONSHIP OF GROSS MARGIN ON WHEAT SALES OF 38 OKLAHOMA COOPERATIVE ELEVATORS TO VARIOUS FACTORS, 1953, 1954, AND 1955

Factor	Gross Margin as a Percent of Total Wheat Sales			
	-3.62 - 0	.10-1.00	1.01-2.00	2.01-3.00
Average	1.46	.73	1.46	2.38
Number of Elevators	5	3	6	6
Average Total Sales	$280,770.45	$263,547.14	$455,957.48	$289,477.32
Average Total Net Earnings	22,471.15	27,581.81	59,699.37	27,073.07
Average Total Assets	224,651.22	234,660.11	327,879.31	215,597.18
Average Total Liabilities	44,018.05	50,103.97	75,726.37	55,771.72
Average Total Net Worth	180,633.14	184,531.47	252,152.94	159,825.46
Average Total Purchases	242,527.07	178,865.30	458,554.92	270,928.20
Average Total Expenses	36,049.82	33,384.86	38,015.43	29,020.74
Average Total Labor Expense	18,174.14	16,726.29	19,000.30	13,988.18
Average Manager's Salary	4,088.49	3,998.08	4,518.57	4,237.93
Average Total Labor Expense to Total Expense	49.65	48.90	50.05	47.68
Average Total Net Earnings per Dollar of Total Expense	.71	.81	1.49	1.07
Average Total Net Earnings per Dollar of Labor Expense	1.55	1.68	3.05	2.32
Average Total Expense per Dollar of Sales	.13	.12	.09	.10
Average Rate Earned on Investment	9.09 percent	10.87 percent	15.92 percent	13.75 percent

TABLE 62 (CONTINUED)

RELATIONSHIP OF GROSS MARGIN ON WHEAT SALES OF 38 OKLAHOMA COOPERATIVE ELEVATORS TO VARIOUS FACTORS, 1953, 1954, AND 1955

Factor	Gross Margin as a Percent of Total Wheat Sales			
	3.01-4.00	4.01-5.00	5.01-9.00	9.01-47.68
Average	3.40	4.56	7.29	21.97
Number of Elevators	4	5	5	4
Average Total Sales	$449,922.25	$487,312.47	$318,700.20	$390,849.58
Average Total Net Earnings	28,579.03	34,019.96	36,446.51	40,826.06
Average Total Assets	194,859.50	237,906.01	221,602.24	276,159.43
Average Total Liabilities	54,325.46	49,519.20	35,514.68	41,949.71
Average Total Net Worth	141,284.04	188,386.81	186,087.56	234,209.72
Average Total Purchases	469,393.48	424,736.74	247,312.81	265,398.50
Average Total Expenses	27,213.28	35,487.76	27,409.46	40,290.71
Average Total Labor Expense	14,176.77	19,011.20	14,465.90	18,674.81
Average Manager's Salary	4,581.03	5,121.51	4,092.35	4,556.77
Average Total Labor Expense to Total Expense	51.56	52.84	53.58	47.78
Average Total Net Earnings per Dollar of Total Expense	1.18	.78	1.27	1.03
Average Total Net Earnings per Dollar of Labor Expense	2.48	1.94	2.73	2.14
Average Total Expense per Dollar of Sales	.07	.08	.09	.11
Average Rate Earned on Investment	17.55 percent	14.07 percent	14.13 percent	13.97 percent

varied widely among elevators. It is difficult to determine from the data obtained just what margin on total wheat sales should be taken. However a few measures of operating efficiency suggested that elevators which took margins between 1.01 and 2.00 percent of sales were the most efficient. Elevators that took these margins had (1) the highest average total net earnings per dollar of average total expense, $1.49; (2) the highest average total net earnings per dollar average total labor expense, $3.05; (3) the second highest total sales; (4) the third lowest average total expense per dollar of average total sales, 9 cents; and (5) the second highest average rate earned on investment, 15.92 percent.

Gross Margin Per Bushel of Wheat

Gross margin per unit of commodity handled should be computed for each department. Gross margin per bushel of wheat ranged from a loss of 5.35 cents to a gain of 39.69 cents per bushel (Table 63). As the margin per bushel increased, purchases increased. The other factors seemed to have little or no affect upon the margin per bushel of wheat. Elevators that took margins per bushel of wheat from 3.01 to 5 cents were most efficient. For example, elevators that took these margins had (1) the highest rate earned on investment, 15.25; (2) the highest average total net earnings per dollar of average total expense, $1.59; (3) the highest average total net earnings per dollar of average total labor expense, $3.37, and (4) along with two other groups had the lowest average total expense per dollar of average total sales, 8 cents.

TABLE 63

RELATIONSHIP OF GROSS MARGIN PER BUSHEL OF WHEAT OF 32 OKLAHOMA COOPERATIVE ELEVATORS TO VARIOUS FACTORS, 1953, 1954, AND 1955

Factor	Gross Margin per Bushel (Cents)					
	-5.35-0	0.00-3.00	3.01-5.00	5.01-8.00	8.01-14.00	14.01-39.69
Average	-3.05	2.05	3.99	6.83	9.60	27.21
Number of Elevators	2	6	8	7	7	2
Average Total Sales	$281,940.70	$281,906.24	$425,360.18	$337,833.56	$433,309.29	$404,921.65
Average Total Net Earnings	39,029.40	41,337.56	47,660.35	31,178.04	37,946.83	39,094.59
Average Total Assets	328,376.00	302.836.18	305,842.43	226,349.01	272,150.06	195,553.98
Average Total Liabilities	55,089.07	66,057.10	66,319.13	46,242.82	52,880.94	15,273.33
Average Total Net Worth	273,286.87	236,779.08	239,523.30	180,106.19	219,554.83	180,280.64
Average Total Purchases	86,857.10	118,254.33	242,943.05	288,125.46	318,347.82	346,940.21
Average Total Expenses	44,898.19	34,704.62	30,527.79	25,978.18	40,209.38	32,104.01
Average Total labor expense	21,064.02	16,788.05	15,323.12	12,388.70	19,569.80	17,517.18
Average Manager's Salary	4,735.64	4,087.09	4,597.44	4,435.98	4,830.96	4,334.38
Average Total Labor Expense to Total Expense	46.52	48.04	49.55	47.72	48.40	58.90
Average Total Net Earnings per Dollar of Total Expense	.94	1.18	1.59	1.18	1.06	.88
Average Total Net Earnings per Dollar of Labor Expense	2.12	2.53	3.27	2.57	2.26	1.74
Average Rate Earned on Investment (Percent)	11.50	13.15	15.25	13.46	13.95	13.64
Average Total Expense per Dollar of Sale (cents)	.16	.12	.08	.08	.10	.08

CHAPTER VI

SUMMARY AND CONCLUSIONS

Throughout time people have found it to their advantage to work together inasmuch as working together resulted in more benefits to each than could be attained by working alone. Because of this realization, there arose the guilds of Greece and Northern Europe, the Friendly Societies of England, and, eventually, the Rochdale Pioneers. These organizations were the forerunners of the cooperative movement in the United States.

Oliver Hudson Kelly, who in 1867 organized the Grange, was the leader of the cooperative movement in the United States. This movement had its largest growth during the last half of the nineteenth century. The first cooperative grain elevator in this country was built in 1857, at Madison, Wisconsin. From this beginning, the number of local cooperative elevator associations in the United States reached a peak of about 4,000 in 1921. Cooperative grain marketing is largely a result of the desire of grain growers to obtain representation on local markets.

Oklahoma farmers were among the last of the major wheat producers to enter into the cooperative grain business. The first farmers' cooperative in Oklahoma was organized at Alva in 1898. At present there are more than one hundred well-organized farmer cooperative elevators operating in the state.

Records are important because they provide management with definite and accurate information relative to the operation and financial condition of the business. Accurate records reveal sources of business efficiency as well as sources of inefficiency. Two of the main factors contributing to the success of a cooperative association are (1) it must be born of necessity, and (2) it must adopt good sound business principles and practices.

This study was made of 39 Oklahoma cooperative grain elevators, most of which are located in the north central section of the State. All the elevators selected were single-unit elevators for which audits were available for the three-year period, 1953-1955. The data for this thesis were obtained from the annual audits of these elevators. The study was undertaken to provide managers and members of cooperative associations with (1) accounting information in a form that could be easily understood, and (2) a means of comparing their business operations with those of similar cooperative associations.

Comparative ratios were computed to enable the management of cooperative elevators to determine more easily the strong and weak points of their organizations. In order to have a basis from which the management of individual elevators could make comparisons, the group average for each of the ratios was used as a standard. The meaning of these ratios was explained and presented in such a way that the managers of local elevators could calculate ratios from their audits and compare them with the ratios of elevators similar in size and organization.

The analysis indicated that the elevators, as a group, were in a sound financial position. The equity of members was 80 percent of the total assets, leaving outsiders a claim to only 20 percent. The average

total operating expense for all elevators increased each year. Salaries accounted for slightly more than 50 percent of the total operating expenses.

The Union Equity Cooperative Exchange and the Consumers Cooperative Association were the major sources of patronage refunds. These organizations accounted for 98 percent of the total patronage refunds realized by all elevators.

Gross sales had an influence upon several of the accounting statement items. The following items increased as gross sales increased: (1) current assets, (2) investments, (3) net worth, (4) total gross earnings, (5) operating earnings, (6) other deductions, (7) patronage refunds, and (8) net earnings. In the case of most elevators, the current ratio increased with gross sales until gross sales amounted to approximately $450,000. Beyond this point the current ratio decreased as gross sales increased.

All the elevators of this study had acid-test ratios above the recommended 1 to 1 ratio. Care should be used, however, in making decisions based upon this ratio since it is dependent upon a number of variables. Two of these variables are: (1) whether the notes payable will be paid in the near future and whether they can be renewed, and (2) the time required to realize on receivables.

All the elevators of this study had average ratios above the recommended 50 to 100 for the relationship of net worth to total assets. This ratio increased with gross sales for two major reasons: (1) as gross sales increased from member business, more patronage refunds were due members, and (2) member's equities were increased from year to year

because of the policy of retaining the net savings in the business instead of distributing them to the patrons.

An analysis of the operating statement by means of ratios may disclose the extent to which success or failure of an elevator is due to the efficiency of management. Due to differences in credit policies, commodities handled, volume of business, costs, and other differences, the use of ratios is limited to general comparisons between similar elevators.

An evaluation of the ratio of gross earnings to gross sales should be made with a knowledge of the existing competitive situation - - whether the margins are so high that they discourage patronage or so low that they do not adequately cover costs. A margin which would strike a "happy medium" somewhere between these two would be preferable.

During the 3-year period, 1953-55, operating expenses amounted to 10.26 cents for each dollar of business transacted. Although the operating ratio is not a measure of the financial condition of a business, it is a "yardstick" by which the comparative operating efficiency of an elevator may be judged. Generally speaking, a low operating ratio in any particular business is a favorable indication, and a high operating ratio is an unfavorable indication.

Maladjustments in any of the fundamental functions of a business affect the net earnings, and usually will be reflected in an unfavorable net earnings to sales ratio. However, it is possible that one unfavorable factor may be counter-balanced by an especially favorable situation in some other factor; hence the net earnings to sales ratio will not be distorted. A thorough ratio analysis of the entire business will, however, reveal any unusual financial situations existing within a particular elevator association.

Inventory turnover increased as gross sales increased. There were two reasons for this apparent trend. First, some elevators reduced their inventories to low figures at the end of the year; other elevators failed to show a beginning and ending inventory. Second, turnover was influenced by the number of departments; the higher the number of departments, the lower the average turnover. The elevator in Group III that influenced the average most, by having an average inventory turnover ratio of 225.5 to 1, had only one department and that was wheat.

The ratio of net earnings to net worth averaged 17.45 to 100 for all elevators during the 3-year period, 1953-55. A number of variable factors affect this ratio. Some of these are: (1) type of business, (2) gross earnings, (3) operating policies, and (4) economic conditions in general.

All the elevators except two had a favorable relationship between gross sales and fixed assets. This ratio is especially useful for newly formed elevator associations and those which are considering expansion. This is true because the acquiring of more facilities than are necessary for the operation of an elevator may be just as unfortunate and costly as the payment of an excessive price for facilities.

Capital turnover ratio measures the rate of turnover of capital employed in the business. An unfavorable rate of capital turnover may be the result of several factors. Some of these factors are: (1) too small a volume of sales, (2) too much capital "tied up" in receivables, (3) too much capital invested in slow-moving inventories, and (4) over-investment in plant facilities. Elevators with large capital turnover ratios are usually in a much better condition to show favorable earnings than those with small capital turnover ratios. Since competition tends to

set limitations upon the amount of operating earnings an elevator may realize upon each dollar of sales, advantages to be gained through greater efficiency in the use of capital materially enhance the opportunity of the business to show favorable earnings.

Most of the elevators of this study had favorable ratios. The analysis showed that an elevator's standing in one ratio did not influence its standing in another ratio unless the same items, or some of the same items, were used in computing both ratios. Because of this, each ratio must be considered separately in evaluating an elevator's relative financial and operating condition.

The data indicated that elevators with three departments were most efficient. These elevators had (1) the least expense per dollar of sales, 8 cents; (2) the lowest gross margin on sales, 3.35 percent; (3) the highest net earnings per dollar of sales, $3.83; and (4) the highest net earnings per dollar of total expense, $1.73.

The largest single item of expense was labor which accounted for about 50 percent of the total of all expenses. An increase in labor expense was associated with an increase in gross sales, number of departments, gross margins on sales, and net earnings. Manager's salary was the largest single item of labor expense. Increases in managers' salaries were associated with increases in gross sales and with the number of departments.

Inventory turnover had little effect upon managers' salaries. The number of departments and gross margins on sales tended to decrease as inventory turnover increased.

The data indicated that elevators which took gross margins on sales between 7.28 and 9.27 percent were the most efficient. Elevators in this margin grouping had the highest rate earned on investment, 17.06 percent, and the greatest net earnings per dollar of labor expense and total expense, $3.43 and $1.66, respectively.

Elevators that realized gross margins on wheat sales between 1.00 and 2.00 percent were most efficient. Elevators with these margins had (1) the highest net earnings per dollar of total expense, $1.49; (2) the highest net earnings per dollar of labor expense, $3.05; (3) the second highest gross sales; and (4) the second highest rate earned on investment, 15.92 percent.

The most efficient elevators were those that charged gross margins per bushel of wheat of from 3.01 to 5.0 cents. These had (1) the highest rate earned on investment, 15.25; (2) the highest net earnings per dollar of total expense, $1.59; (3) the highest net earnings per dollar of labor expense, $3.37; and (4) along with two other groups had the lowest total expense per dollar of gross sales, 8.0 cents.

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VITA

Henry Ponder

Candidate for the Degree of

Master of Science

Thesis: A BUSINESS STUDY OF SELECTED OKLAHOMA COOPERATIVE GRAIN ELEVATORS, 1953-1955

Major: Agricultural Economics

Biographical:

Personal data: Born near Seminole, Oklahoma, March 28, 1928, the son of Frank and Lillie Ponder.

Education: Attended Johnson grade school, near Wewoka, Oklahoma; graduated from Douglass High School Wewoka, 1946; received the Bachelor of Science degree from Langston University with a major in Agricultural Education in May, 1951; completed requirements for Master of Science Degree in September, 1957.

Experiences: Farm Superintendent, Oklahoma State Board of Affairs, October, 1951 to December, 1953; United States Army, Artillery, December, 1953 to November, 1955; Research Assistant, Oklahoma State University, September, 1956 to September, 1957.

THESIS TITLE: A BUSINESS STUDY OF SELECTED OKLAHOMA COOPERATIVE GRAIN ELEVATORS, 1953-1955

AUTHOR: Henry Ponder

THESIS ADVISOR: Dr. Nellis A. Briscoe

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TYPIST: Gwen Martin